Marine Corps Gazette

OCT 1957
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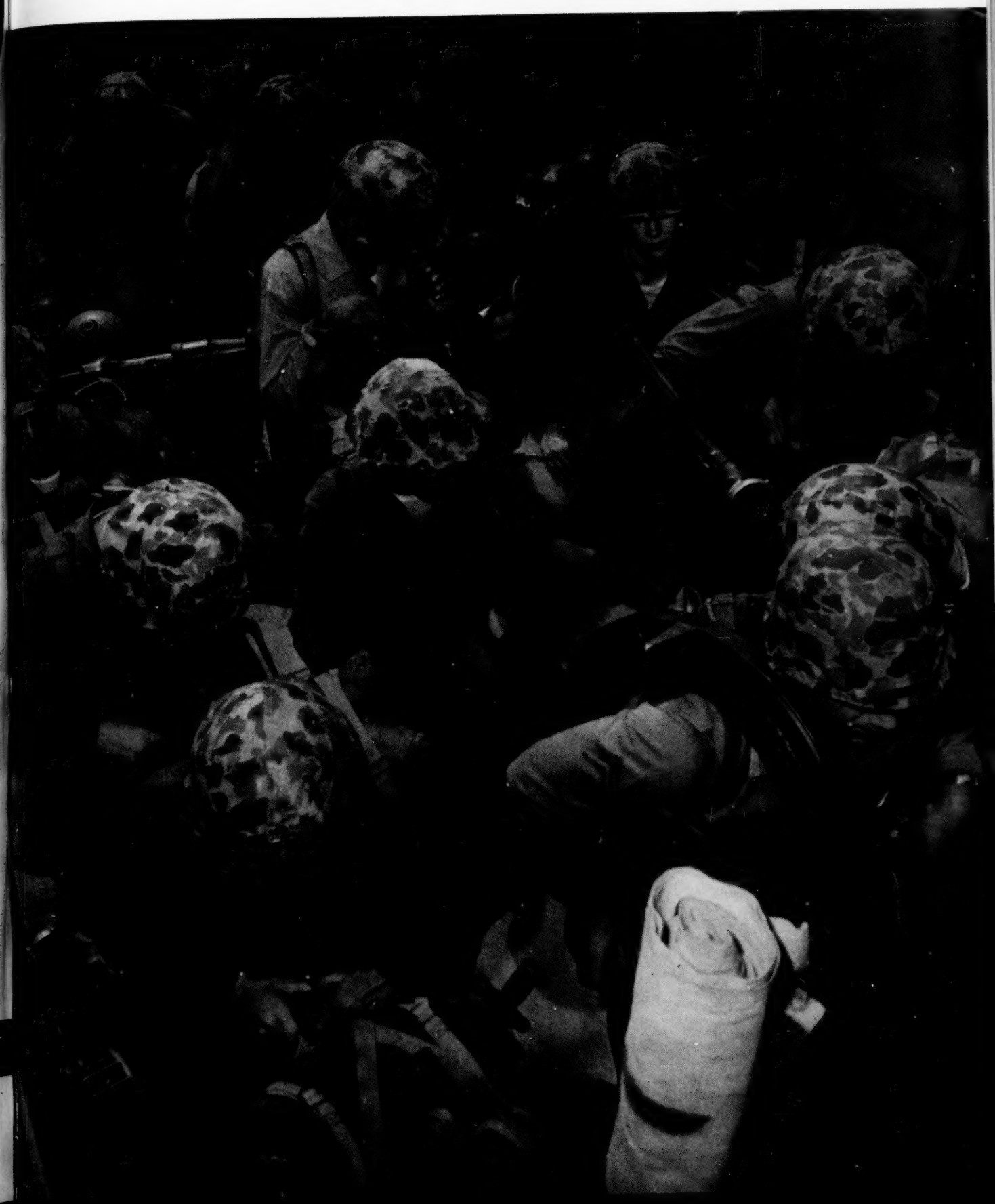

Marine Corps Gazette

OCTOBER 1957
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IN THIS ISSUE

The Commandant Reports		4
The Marine Corps Reserve	*BrigGen W. W. Stickney*	8
Fight the Enemy	*Col W. F. Prickett*	16
Radio Relay	*Maj G. M. Bryant and Capt D. H. Tinius*	20
Goodbye Able Dog	*LtCol J. F. Bolt*	28
Leatherneck Pilots in the Making		32
Marine Corps Association Representatives		35
The Spanish Armada	*William V. Kennedy*	36
Ontos	*LtCol E. L. Bale, Jr.*	48
Improve the NCO School	*MSgt Charles V. Crumb, FMCR*	55
The Amphibious Patrol	*Capt David C. MacMichael*	60
Message Center	5	
In Brief	34	
Passing in Review	45	
New Books	51	
Observation Post	52	

THIS MONTH AND NEXT BrigGen W. W. Stickney leads off this month with the first of a 4-part article on the Marine Corps Reserve. This article will be of interest to all Marines, regular and reserve. The communicators, aviators and tankers all have a few words on new equipment now in the Marine Corps inventory (see *Radio Relay, Goodbye Able Dog* and *Ontos*). Next month will be our Marine Corps Birthday issue and, we might add, a good time to give a gift subscription to a friend or relative.

We have in mind a cover which will lend itself to being framed for your office, and some articles to stimulate the thinking of all our readers. Dr. Anthony E. Sokol presents *War and the Atom Bomb*, a look at the military posture of the US vis-a-vis Russia. *Initiative*, by Maj Dennis D. Nicholson, an honorable mention selection in the 1956 Marine Corps Association Essay Contest, is also scheduled for publication.

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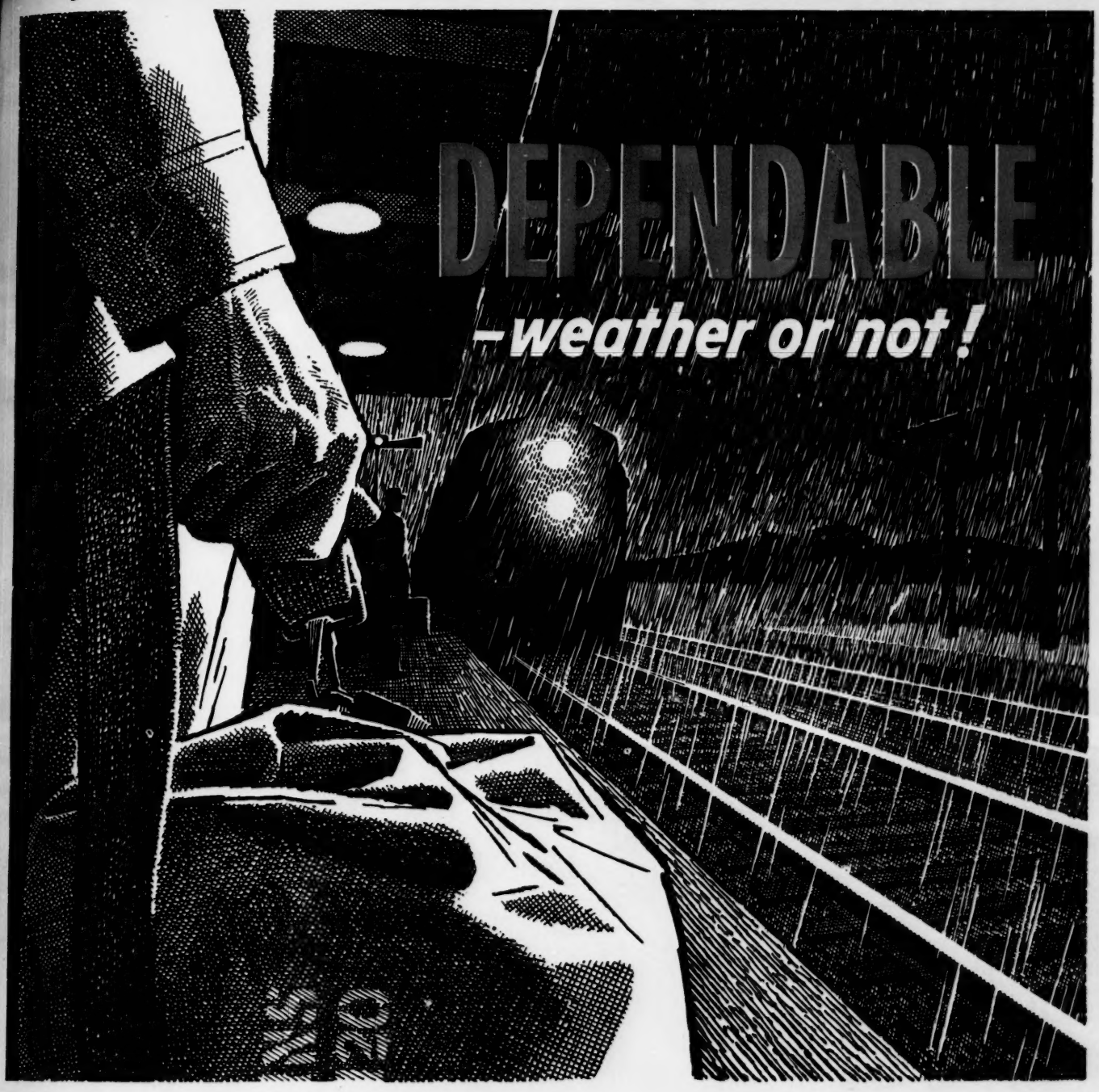

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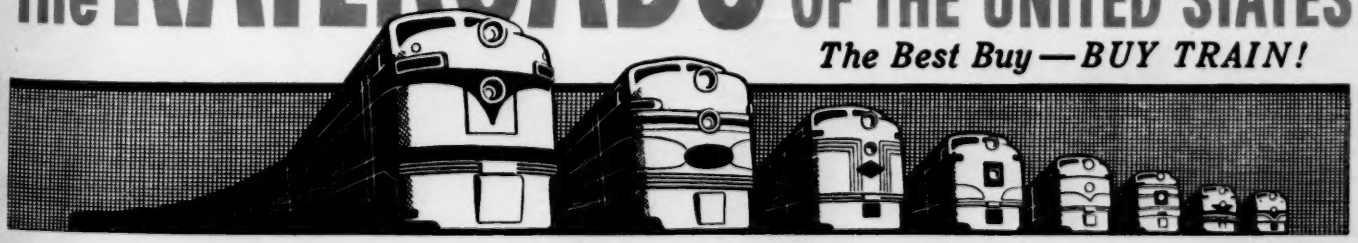
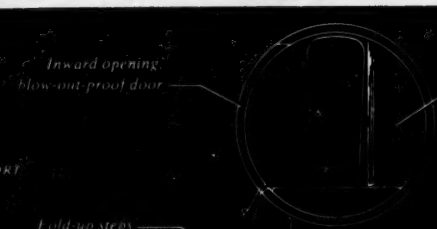


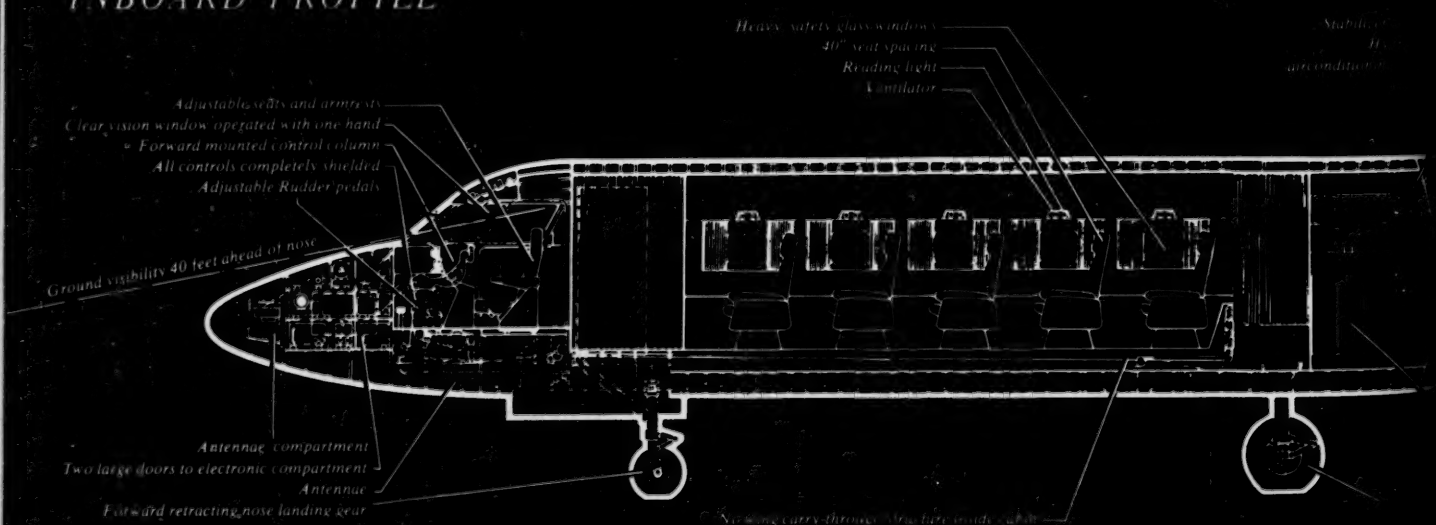
JETSTAR

THE LOCKHEED C-140 JET TRANSPORT



ENTRY SECTION

INBOARD PROFILE



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THE COMMANDANT REPORTS

EXCERPT FROM THE ANNUAL REPORT OF THE COMMANDANT TO THE SECRETARY OF THE NAVY. PRINTED BY PERMISSION OF THE SECRETARY OF THE NAVY.

By long established custom, and more recently in response to orders, the Commandant of the Marine Corps has rendered annual reports to the Secretary of the Navy, his immediate superior in the Department of the Navy. In this, the annual report for Fiscal Year 1957, the state of the Corps is depicted, its objectives and achievements are set forth, significant happenings are related, and problems are defined.

The Marine Corps' goals and guidance for Fiscal Year 1957 derived from law, from announced Program Objectives of the Department of the Navy, and from plans of the Joint Chiefs of Staff. Essentially, these required the Corps, within prescribed strength and budgetary limitations, to maintain three combat divisions and three air wings, together with necessary reinforcing and supporting units, in a state of maximum combat readiness, to provide security forces for the naval establishment and certain other Government activities, to provide detachments for certain ships of the Navy, to prosecute the development of amphibious warfare, and to maintain a suitable basis for mobilization. These undertakings were to be accomplished, through careful management, with a minimum expenditure of funds and resources.

The Marine Corps' efforts in the achievement of these goals took the form of nine major programs, each of which is treated at length in a subsequent section of this report. A brief mention of some of the salient aspects of these programs at this point will serve to summarize the most significant activities of the year, and the general state of the Corps at the year's end.

The Troop Program achieved its goal of maintaining required combat forces in a high state of readiness. This was vividly demonstrated at the time of the Suez crisis, when Fleet Marine Force units took part in precautionary operations, or were embarked in readiness for such operations, on notice which in most cases did not exceed a few hours.

Concurrent with these demonstrations of existing readiness, actions were begun to assure the long-term readiness of the Fleet Marine Forces by re-shaping their structure to exploit the expected advantages of new weapons and equipment, and to adapt them to the anticipated conditions of future warfare. An important segment of the Fleet Marine Forces has already been converted to the new design, and conversion of the remainder will ensue at a rapid rate.

The maintenance of readiness was rendered difficult by lack of personnel to do all the things thought necessary to be done. The principal effort in the Manpower Program was devoted to the solution of this problem by a variety of means. The degree of success attained was due in substantial measure to widespread improvement in manpower management. It was also due in very large measure to a Training Program which raised individual knowledge and skills, and repeatedly exercised the Fleet Marine Forces in realistic maneuvers.

The conversion of the Fleet Marine Force structure, involving the introduction of new weapons and equipment, has created serious problems within the Material Program and the Research and Development Program. Not only are new items needed, some of which have not yet emerged from the early stages of development, but obsolete and obsolescent ones must be retired from service in an economical way. At the same time, the needs of mobilization must be foreseen and material placed in reserve for that contingency. Within the limits of the funds available, the Corps made progress toward these ends. Nevertheless, much remains to be done in the future to achieve a satisfactory position in these regards.

In the pursuit of its objectives, the Marine Corps enjoyed harmonious and fruitful relations with the other Services, especially with the Navy, with whose past, present, and future it is inseparably linked. Differences of opinion have only served to increase the common fund of knowledge, and competition, where it has existed, has only served to whet the keen edge of performance.

This year's report, like that of recent previous years, must draw the general conclusion that the state of the Marine Corps is excellent. The Corps is confident of its ability to solve the important problems which confront it. It continues to stand ready for any undertaking required of it.

It's a Wonder

. . . In reading the fine article by Colonel Willock on Colonel Thomason (May GAZETTE), I was reminded of a personal experience with Colonel Thomason when I was serving as Executive Officer of the Western Platoon Leader's Class in the summer of 1939.

During the training program a demonstration of the fire power of a reinforced Rifle Company was to be staged at Camp Elliott for the members of the Platoon Leader's Class.

A demonstration company, from one of the battalions of the Sixth Marines, contained a large number of recruits and new NCOs. Some doubt was expressed as to how well the demonstration would go off. The battalion commander responsible for this demonstration was the late Colonel John W. Thomason, Jr.

The demonstration came off on schedule and turned out very well. On route back to San Diego, Major General L. McLittle, then Commanding General of Fleet Marine Force Pacific, turned to Colonel Thomason, who was riding in the car with him and said, "John, that was a fine demonstration and I think your men did very well in spite of their inexperience."

Colonel Thomason was silent for a minute then said, in his slow Texas drawl, "Thank you, General, I thought so too. You know, Suh, it's like the story of the dancin' dawg. It ain't the wonder of the dawg dancin' so very well, it's the wonder of the dawg dancin' at all."

BRIGGEN A. L. BOWSER
MCRD, San Diego

Trust in Jr. NCOs

. . . I would like to proffer several remarks in response to the article *Recon Rebuttal* by Captain H. D. Fredericks in the June issue of your excellent publication GAZETTE.

Captain Fredericks reminded us of one of the most important principles of military leadership by emphasizing that we must place more faith and trust in our Junior NCOs.

We should never make the mistake of minimizing the competency of these junior leaders. The Marine Corps has a supremely fine team of Junior NCOs and from my personal observation there is nothing fundamentally wrong with our training program.

The military leader must create a command relationship between himself and his men if he expects productive and immediate action on their part. Certainly to create this relationship he must have confidence and trust in his men. No matter how fine our equipment and technical know-how might be, a leader simply cannot conduct a successful campaign without the establishment and understanding of proper human relations.

SGT JOHN POWELL
Rockford, Ill.

Communications

. . . Bravo for Capt Chapman, *Confessions of a 2502* (April issue). Let's hear from someone who can carry simplification of communications a few more steps in the proper direction.

If and when we operate with 10 or 100 miles separating elements, it stands to reason radio will be our primary life line to home. Let's plan it now so even a poor "gravel cruncher" can talk to his subordinates without a cpl (or capt) to translate.

COL GLENN R. LONG
10th Nav Dis
Navy #116

Police Up the 4th Estate?

. . . Col R. A. McGill's letter under the heading "4th Estate" (May GAZETTE) concerning the article on PubInfo by Captain R. B. Morrisey, speaks of it as "timely and thought-provoking."

I submit that the Colonel's letter is more thought-provoking than Captain Morrisey's article. Undoubtedly there have been incompetents in PubInfo duty in the past, not only enlisted but officer personnel, but I quarrel with the Colonel's implication that this has been the case except in a very small minority of instances. A competent newsman, civilian or military, does not lift quotations out of context and by irresponsible reporting twist them to a different meaning: sensationalize the commonplace, or distort the news by omission or twisting of fact.

During World War II and the Korean fighting there were many men in the Marine Corps uniform who performed the duties of correspondent, photographer, or radio correspondent with a high degree of professional skill, ethics and competence. They performed these duties with such devotion that many were killed or wounded, and a number were decorated or officially commended, because as Marines they took pride in doing their assigned jobs well and faithfully, regardless of personal hardship or cost.

Some day I trust the editors of the GAZETTE will find space for an adequate accounting of the performance of PubInfo personnel and their contribution to the Corps' accomplishments and history. More to the point, I hope such an accounting will give concrete suggestions for making PubInfo more effective through a clearer understanding of its work among other Marine Corps personnel — who, apparently, like Colonel McGill, seem to fail at present to understand the "Fourth Estate" in its military form.

MSGT G. S. CHAPPARS, USMCR
45 Windihill
Greensburg, Pa.

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No reader will put down this article without bett

ED: *This is the 1st of a 4 part article. Chapter II will be published in the Nov. issue.*

withou[t] better understanding of the Marine Corps Reserve

The Marine Corps Reserve

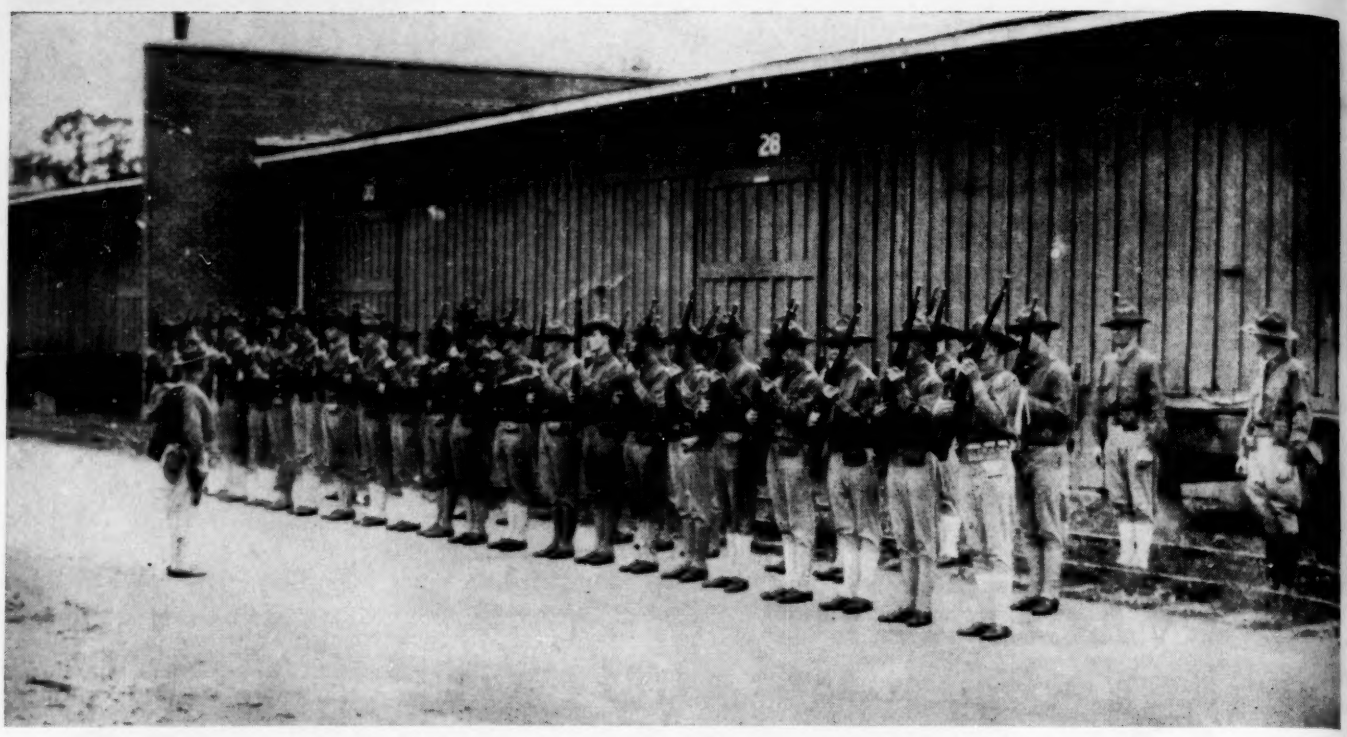
By BrigGen W. W. Stickney

Chapter I

SEVERAL APPELLATIONS HAVE been glued to the Marine Corps Reserve through the years — a practice that its leaders have gone to considerable lengths to discourage. But one cropped up not too long ago that met the approbation of all hands. It was coined by a man who was eminently qualified to evaluate the organization at the time — Gen Lemuel C. Shepherd, Jr.

The Korean conflict was grinding toward its second anniversary when he told the graduating Senior School class at Quantico, "I say with heartfelt assurance, as I have said so many other times, the loyalty of our Reserve has been the Marines' Secret Weapon in the last 23 months."

It was perhaps the first time that reservists, who automatically wince when called week-end warriors, citizen-Marines, part-time patriots and other such nick-names, found themselves referred to as a weapon. Once they became accustomed to it, they



The 304th Co at summer training — Quantico, 1927

liked it. Today, Reserve recruits in many organizations learn its meaning just as they study the intricacies of the M-1.

To carry General Shepherd's sharp analogy to the Reserve as a secret weapon further, the present Reserve is a weapon indeed, a highly developed one with dozens of modifications, capable of performing great things, and like other complex weapons is sometimes cranky as all hell.

There are times when officers like myself, who have been charged with the operation of the Reserve program, feel this "Secret Weapon" is far too secret; that many responsible individuals in our Corps experience difficulty in utilizing the Reserve to its fullest because they are unfamiliar with it. This is understandable, since in peacetime the reserve and the regular establishment travel divergent courses, the one with the objective of training for any foreseeable emergency, the other serving as an actual "Force-in-Readiness." Except for brief training periods during the year, the 2 organizations have very limited contact.

The Regular who views Reservists in small company-size units training at Camp Pendleton, Camp Lejeune and other establishments, tends to underestimate the great strength of the Reserve. There are many thousand more Marine Corps Reservists than there are Regulars on the rolls, and the Reserve is still building and will increase greatly under current legislation. To see what the Reserve can accomplish, it is only necessary to glance at its record in the last 2 decades.

When the atomic bomb flattened Hiroshima on 6 August 1945, there were on active duty some 30,074 commissioned and 307,340 enlisted reserve personnel. Since the total strength of the Corps at the time was 480,988 officers and men, it is at once apparent that the Reserves were carrying the preponderant share (70.15 per cent) of the Marine Corps load — not a new situation for the Reserves, as they had far outnumbered the Regulars almost from the inception of WWII hostilities.

When the aggressors from North Korea launched the lightning invasion of South Korea on that quiet, last Sunday of June 1950, the Marine Corps Reserve had a total strength of approximately 128,000—almost double that of the Regulars.

At the time of the Inchon-Seoul operation, there were more Marines in Korea than there had been in the total FMF two-and-a-half months earlier. Twenty per cent of these were Reservists, only 6 to 8 weeks removed from normal civilian pursuits. By the end of March 1951, approximately 38 per cent of the officers and 48 per cent of the enlisted personnel in Korea were Reservists. And the United Nations Force

BrigGen Stickney, USMCR, has distinguished himself in the field of law as well as in the military. Few, if any, officers are as well qualified to write with authority about the Marine Corps Reserve. After receiving his LLB degree from National University, he practiced law before the US Supreme Court from 1931 to 1935. After WWII he served as Principal Attorney for the Division of Corporate Finance of the SEC. Commissioned a 2dLt in the Marine Corps Reserve on 5 June 1930, he has spent considerable time on active duty. Ordered to extended active duty in June 1952, he was named Deputy Director of the Marine Corps Reserve and later served, at 2 different times, as Director Marine Corps Reserve. He has also served as: Member, Reserve Forces Policy Board, Office of the Secretary of Defense; Senior Member, SWAG Board, HQMC; President, 1956 and 1957, Marine Corps Reserve Policy Board.

which, as early as November the year before, inflicted the first decisive defeat upon a Chinese Communist *division,* was a Marine *regiment* including approximately 34 per cent Reservists.

There's a great deal more in the action reports of both wars, but the important thing is that the Reserve was there when it was needed and it produced. This accomplishment was possible mainly through the efforts of 2 groups, one small, the other vast. The first group numbers those officers and men whose foresight and persistence supported the establishment of the Reserve and saw it through the hard years of economy, in depression and between wars. The other element is the same as that which makes up the fibre and being of the Regular Corps, the volunteer.

In addition to having a willingness to take his lumps alongside the Regulars in time of war, the Reserve volunteer has many additional problems, i.e., calls to active duty on sudden notice, with almost as short a period between call and combat commitment, and the necessity of devoting a great deal of time toward maintaining his military proficiency in addition to his regular civilian job in peacetime.

In view of this, it is often asked, why does a man become a Marine Corps Reservist?

The answer lies in the individual —the man with a conscience of right and a will to fight for that right. The kind of spirit which soon imbues itself into and becomes a part of the Corps.

This type of American who stood at Concord, froze at Valley Forge and battled valiantly in France and in the Pacific is, I regret to say, currently coming in short supply. However, a regiment of such men can do more in battle than a division of forced obligors — a lesson this and other free countries must learn if they expect to survive the communist hordes.

How well has the team of the planner and the volunteer worked together to give the Marine Corps this "Secret Weapon?" Very well indeed for, from a historical standpoint, actual construction work has been underway a comparatively short time.

The Marine Corps acquired a Reserve on paper in 1914 when Congress enacted laws covering the organization of Reserves to reinforce the Regular Marine Corps in the event of war or national emergency. However, on 6 April 1917, the date of entry of the US into WWI, the rolls of the Marine Corps Reserve listed but 3 officers and 33 enlisted. A few days later, after Reserve recruiting stations had been established, this total increased rapidly. In Philadelphia, 3 full Reserve companies were recruited and trained at the Navy Yard as the 1st, 2d and 3d Reserve Companies. All enlistments were originally for duty only within the continental limits of the United States. An additional examination and transfer lifted this restriction and very little time was lost by the great majority in effecting their transfer, as rumors of regiments to serve overseas were circulating.

From the beginning, the Marine Corps Reserve has attracted the finest type of men. Young men of excellent character, perfect physical condition and good education. In 1917 many of those enlisting had not yet graduated from high school and there were some only 16 years of age. It was possible to enlist at that age with parents' consent. These youngsters were assigned duties as buglers, drummers or orderlies. Later, many college men who originally enlisted in the Marine Corps Reserve and others who applied direct, were sent to officers' training camps. Upon completion of special training, they received commissions as reserve officers but served with the regular forces until the end of the war.

As has always been Marine procedure, the Reserves lost their identity as such from the moment they were transferred to regiments and other units of the regular establishment. This accounts for the brief mention of the Marine Corps Reserve in past history. We believe this is a very good practice and has done much to maintain the spirit of the oneness of the Corps. Above all, we are all Marines, regardless of individual classifications. However, records show that many reserves rendered heroic service as members of the famous Fifth and Sixth Regiments and the First Marine Aviation Force in France. Quite a few others served for several years in the Seventh Regiment, an expeditionary force sent to Cuba for duty in connection with the guarding of sugar plantations and other important property. By 11 November 1918, there were 463 officers and approximately 6,773 enlisted personnel, including about 250 women carried as "Marinettes" on the rolls of the Reserve.

The majority of the officers, and many enlisted men of the Reserve, remained in the Marine Corps following the war. This has proven to be a normal evolution in the devel-

Members of the 10th Inf Bn (greens) at Camp Pendleton

Squantum Marine Air Reserve pilots at Cherry Point

opment of reserve service as, not only following each war but even after each active duty period, we lose a large percentage of our reservists by integration into the regular establishment. An act of Congress on 4 June 1920 allowed officers to be transferred to the regular Marine Corps and many of the enlisted personnel reenlisted in the regulars. The others were released from active duty since they desired to finish their education or return to positions that they had voluntarily given up to offer their services to the Corps in time of need. However, while transferred to an inactive status, they were subject to call and received a small yearly retainer pay for the balance of their 4-year enrollment.

For several years following the war, there was a low point in Marine Corps Reserve activity. A few remained on the volunteer list and the remainder represented men of the regular establishment who were transferred to a special reserve class after 16 or 20 years' service.

In 1924 interest again mounted and, in 1925 and 1926, there were Fleet Marine Corps reserve companies formed in various cities throughout the country with former officers and enlisted men of both the regular and reserve as a nucleus. A number of former officers and certain non-commissioned officers were given commissioned rank and annual training periods at Quantico, Virginia and Great Lake Naval Training Station, Illinois.

Regular, paid weekly drills of the old fleet companies produced excellent results and quite a few of them became exhibition units in their communities – many requests being received to perform intricate drills at various functions.

In the latter part of 1929, interest in the Reserve was keen and with groups of certain fleet companies as a nucleus, sufficient companies were organized to establish battalions. Most of them were authorized to have 4 line companies, and a headquarters company. Following this, regiments were formed consisting of 3 to 4 battalions, a regimental headquarters and a regimental service company, including a band. By the summer of 1930, several regiments were fairly complete and as such were ordered to annual training duty at Quantico, Virginia, and other points. These organizations continued through 1931 to 1934 with even further expansion by the formation of a brigade consisting of several regiments of the District of Columbia, Virginia, Maryland, Pennsylvania and New York States. In 1935 the table of organization was changed and the brigade and all regiments discontinued and reorganized as individual battalions to conform with regular Navy and Marine Corps policy of training smaller, more mobile units that could easily operate with the fleet.

During the period from the time of formation of the battalions until 30 June 1935, the height of the depression, pay was authorized only for the annual training periods. Weekly drills were on a voluntary basis, but records show that esprit de corps was ever present and during the worst years of the depression, with great sacrifice on the part of a large percentage of both officers and enlisted men, the Reserve continued to grow.

With the rapid growth of the Reserve, it became clear that the brigade and regimental organization was becoming too cumbersome and unwieldy, due to the necessary dispersion of integral units. Consequently, a gradual transition was effected from that type of organization to the present system of the battalion as the largest organized unit of the Marine Corps Reserve. This transition was completed in November, 1935, at which time the Fleet Marine Corps Reserve, authorized to perform drills and training duty, was composed of 13 battalions, with a total of 132 officers and 2,782 enlisted.

The volunteer Marine Corps Re-

serve was also being built up by encouraging regular Marines to enlist therein upon discharge, so that on 31 October 1935, the total strength of the Marine Corps Reserve, fleet and volunteer, was 673 officers and 8,532 enlisted.

This strength was not considered sufficient for the Reserve to perform its assigned role in case of war, so as funds became available the troop list was increased to 21 infantry and 2 artillery battalions.

A serious problem which confronted the Marine Corps during the early 1930's was the procurement of junior reserve officers. Had a national emergency been declared at that time, the necessary expansion of the Marine Corps would have left it entirely without first and second lieutenants. As a solution to this problem, the platoon leaders' class was conceived and placed into operation. It has furnished the Reserve with approximately 125 second lieutenants each year since 1936.

Nor was the important air arm of the Reserve being neglected during the years of expansion. From 1931 until the mobilization in October 1940, 13 squadrons were organized, trained and made available for duty. The actual strength of the Aviation Reserve, as of 31 October 1940, was 123 officers and 788 enlisted men.

The Marine Corps Reserve, created by act of 29 August 1916 and augmented by act of 1 July 1925, was abolished when Congress passed the Naval Reserve Act of 1938. This latter act created a Marine Corps Reserve composed of the fleet, volunteer and organized reserve; the fleet reserve to include ex-Marines with 4 or more years regular service; the volunteer, of those readily available for training and service; the organized, composed of personnel and squadrons who perform weekly drills and annual field training.

Then came November 1940 when 236 officers and 5,007 enlisted Marines from the reserve battalions reported for active duty in obedience to mobilization orders. The 3 officers and 1,185 enlisted who did not report, represent those who failed to qualify physically, or whose requests for deferment or discharge were approved due to dependency or to holding key positions in industries vital to the national defense program. This was only the beginning of the great mobilization for WW II and, as has already been related, many thousands of Reserves were to perform with distinction in that conflict.

Hardly had the gun smoke of WW II cleared the air when the Division of Reserve was ready with its plans for an active and alert post-war reserve. When demobilization was completed, the Marine Corps began a new program which incorporated all the lessons learned during, and between, war periods and which was sufficiently varied to offer opportunities for all veterans, as well as new Marines, to maintain and develop their service qualifications. The Reserve then, as now, was organized into 4 components: the fleet, the organized, the volunteer and the women's reserve, both air and ground.

During the post-war years, the nation steadily decreased its regular Marine Corps and, because of the obviously perilous times, placed a correspondingly heavier reliance on a strong and rapidly employable reserve as a complement to the regular corps. This reserve was established, and its mission—to provide trained personnel for integration into the Marine Corps in time of national emergency—was defined. The Korean conflict soon tested this Reserve and, fortunately, found it ready in spirit, in numbers and in quality.

On 30 June 1950, the Marine Corps Reserve was composed of: the organized ground reserve, with 33,528 Marines in 138 separate functioning units; the organized aviation reserve, with a strength of 6,341 in 30 fighter squadrons and 12 ground control intercept squadrons; the volunteer reserve, with a strength of approximately 88,000. Of this overall group, a substantial majority were battle-tested veterans of WW II and a few old war-horses, like myself, from WW I.

On 10 and 15 July, General MacArthur urgently requested a war-strength Marine division with appropriate air for employment in Korea. The joint chiefs of staff asked the Commandant how much time the Marine Corps would require to create a third regimental combat team for the 1st Mar Div. The Commandant could only reply that the Marine Corps did not possess enough personnel to form an additional regimental combat team without calling Marine reservists to active duty. This fateful step was authorized by the President, with congressional sanction, on 19 July,

Summer training at Camp Pendleton

Members of the 12th Rifle Co — MCRD, San Diego

and the die was cast. The Reserves were committed, the Minute Men had been called. The Commandant was going to employ his secret weapon.

On 20 July, 22 units (with a total strength of 4,830) were ordered to extended active duty, with a delay of but 10 days. During the next 15 days (21 July—4 August), the total organized ground reserve was ordered to active duty on a schedule which took into account the state of readiness of the various units, the proximity of their initial station of deployment, and the facilities available to receive and care for them. Orders were issued to 38 units with a total strength of 1,880 officers and 31,648 enlisted Marines. By 11 September, in a period of 43 days, all of the units had reported for active duty, and the organized reserve had, for the time being, ceased to exist.

On 31 July, even as the first reservists were arriving at Camp Pendleton, California, and approximately 6,800 regular Marines of the 2nd Mar Div were mounting out of Camp Lejeune to join the 1st Mar Div, the joint chiefs directed the Marine Corps to expand the 2nd Mar Div to war strength and increase the number of Marine tactical squadrons.

The problem posed is at once apparent. Obviously, both divisions could not be built up simultaneously, and in view of the pending commitment of the 1st Mar Div, it was mandatory that this unit receive top priority. It was in the build-up of the 1st Mar Div that the Marine Reserves made their first important direct contribution.

Basically, the problem was to select those reservists who, by virtue of previous training or military experience, were best qualified for inclusion in the 1st Mar Div. It was in the vital interest of both the division and the individual reservists that the task be performed with the minimum degree of error. An inadequately trained man is too often a liability in a combat situation, endangering his own life and those of his fellows, and lowering the combat efficiency of his unit.

But the urgency of the 1st Mar Div departure did not permit the usual process of analyzing all training records, interviewing the men and their officers, and giving practical tests. Hence, criteria for the selection of the reservists had to be established which would permit a rapid selection within the means available. Accordingly, 3 general categories were set up: combat-ready, non-combat-ready, and recruit class.

Reservists falling into the non-combat ready category, but not in the recruit class, were generally assigned to the continental security forces in order to restore the 50 per cent reduction in those forces; to replace regulars in overseas security detachments on a man-to-man basis

Marines of the 9th Eng Co training at Camp Pendleton

and thus make additional regulars available for combat; and to the training and replacement regiments where they could make up their training deficiencies and themselves become available for combat as replacements for the 1st Mar Div approximately 30 per cent fell in this category.

Reservists falling in the recruit class, approximately 18 to 30 per cent, were generally assigned to recruit training and some, temporarily, to administrative and service organizations.

Approximately 50 per cent of the reservists, *including all officers,* fell into the combat-ready category and 2,891 of these were assigned to the 1st Mar Div. They, and all who later followed them to Korea, once more proved the soundness of our reserve component.

The 2d Eng Co constructs a "Bailey Bridge"

At the time General Shepherd was making his point about the Corps' "secret weapon" and the majority of the reserves were still on duty on a full time basis, work was started at Headquarters Marine Corps on rebuilding the peacetime reserve.

The success in re-establishing reserve units following WW II, supplied those charged with the project with considerable optimism. The same guidelines employed as before were adopted. Unfortunately, they didn't meet the test at this particular period. From 1946 to 1952, 6 years and one war later, the attitude of the vast American public had undergone a disquieting change. The buildup of the reserve moved slowly at first. This was expected but our representatives in the field reported they were meeting with unusual opposition in some areas. Sometimes it was passive, other places it was active. In this crisis new techniques had to be devised. Tactics were hurriedly altered to meet each new, and frequently unforeseen, problem.

Remember, the reserve still had the mission of backing up the regulars in an emergency. The emergencies were evident at the time, but the reserve could have only feebly carried out its mission at best. We were trying to build a "reserve by persuasion" in those days. We persuaded long and hard, we got our volunteers but they came in drops and dribbles instead of droves.

I propose to discuss the era of "reserve by persuasion" in the next chapter. It was a brief period, 1952-1954, but we learned a great deal, some of which turned bright young Marine Corps officers into bleeding cynics almost overnight. USMC

★ ★ ★ ★

A Bit of History

A GROUP of recent graduates of boot camp, attending a school at Camp Del Mar, were holding field day in the evening, preparing for the Colonel's customary Saturday inspection the following morning.

The NCO in Charge, a particularly conscientious young Corporal, was called to the barracks phone to be harangued by the mother of one of his working party. It seemed the good lady had traveled a considerable distance to visit her son, and was outraged at the discovery that he would be given liberty only when the field day was completed to our Corporal's satisfaction.

After dwelling at length on the Corporal's motives, intelligence, authority and probable sadistic tendencies the doting mother demanded to know "just how long has this sort of thing been going on?" To which the crisp reply was, "every Friday night since 1775, ma'am."

Capt R. P. Chaney

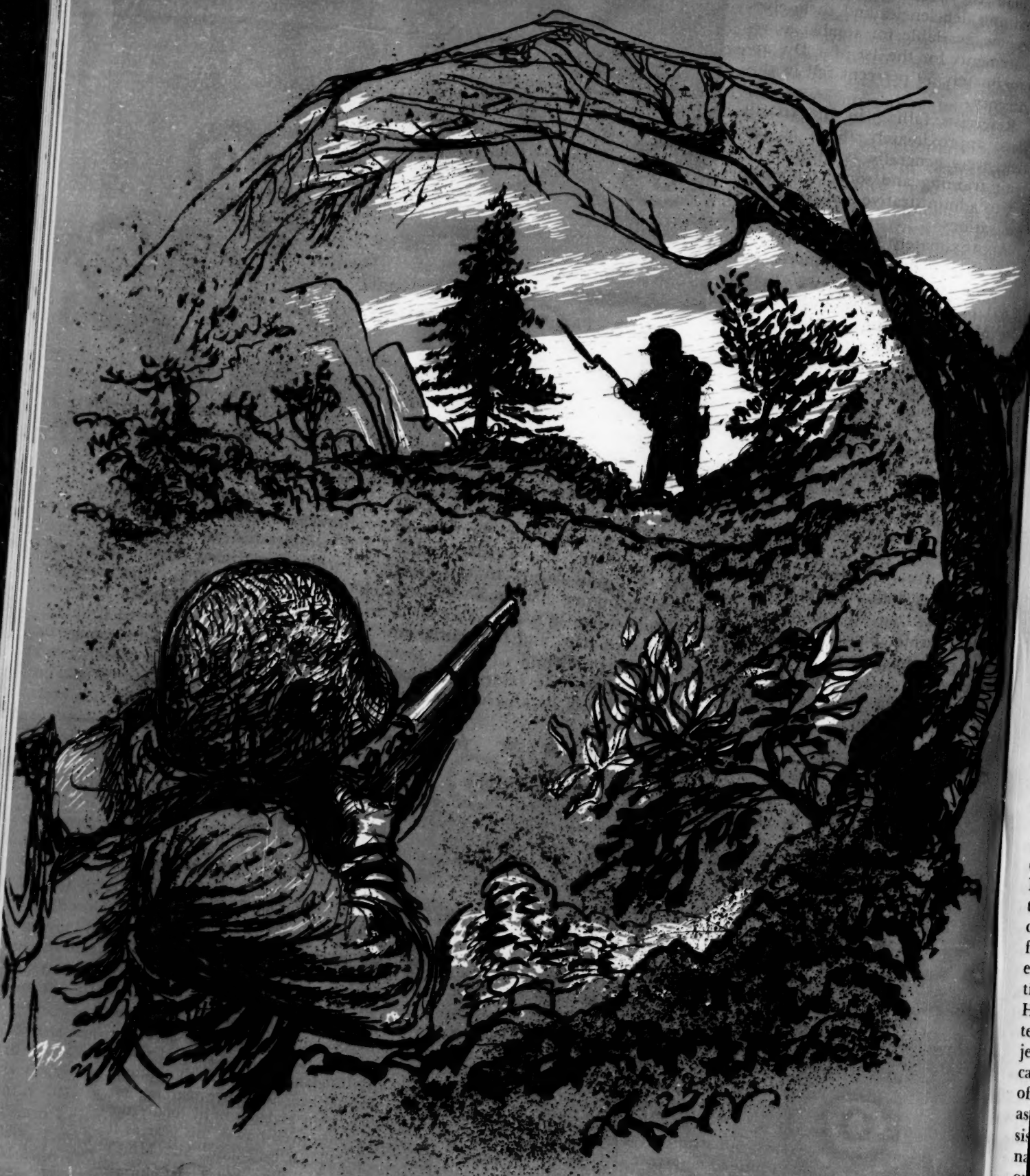
"Whatever You Say, Sir!"

IT APPEARED as if our weeks of preparation for the Inspector General had all gone up in smoke! With a great deal of anticipation we had wondered how our company would impress the Inspecting Officer. Without a doubt, this little incident broke the ice and impressed him no end: The IG approached a paralyzed Private standing alongside his double-deck bunk and in front of his bunk-mate. He had spent hours preparing his lay-out on the upper bunk. It was perfect. As the IG glanced down at the bottom bunk, he started in . . . "The belt is dirty and frayed, the buckle not polished, improper marking on skivvies, shoe laces not displayed correctly, shirt improperly folded" . . . on and on, until finally the Inspector could continue no longer. He exploded at last, "Why haven't you squared away this gear as it should be, Private?" To this the Private replied with all due respect, "Because it isn't mine, Sir! Mine's on top!"

Maj R. S. Geissinger

(The GAZETTE *will pay $10.00 for each anecdote published. Submissions should be short and pointed.)*

FIGHT THE ENEMY



By Col W. F. Prickett

Mission: Seize, occupy and defend hill 407. Familiar words to all recipients of the Operation Order. However, says this author, they omit the most important task

EVERYONE RECOGNIZES THAT THE National Military Establishment exists to fight the enemy. In spite of this common knowledge, all too often in the past, the enemy has not been the target of military operations. Lest anyone misunderstand, this is *not* an oblique opening to an attack on the proponents of air power, who claim that the destruction of the enemy's industrial potential is the primary job of the Armed Services. Quite the contrary, this is an attack on the prevalent practice of fighting the terrain instead of the enemy.

Every Marine is familiar with operation order phrases such as: "seize, occupy and defend the high ground dominating the city of . . ."; "destroy the fortifications at target area . . ."; "capture and secure Hill . . ." There is nothing said about seizing, capturing or destroying the enemy. Isn't the enemy important? It is conceivable that a unit might accomplish its mission without injuring or capturing a single enemy soldier. There is no contention, or even implication, in the above that terrain is not at times critical. However, the enemy is certainly a great deal more critical than portions of his real estate.

This practice of establishing terrain as the objective of military operations is in sharp contrast to the Russian doctrine, where invariably their units are given the mission of destroying or capturing: "the enemy force in the vicinity of . . ."; "the enemy force occupying the fortifications at . . ."; "the enemy force on Hill . . ." In the Russian system, terrain is not ignored but the objective is always the destruction or capture of the enemy. As a matter of fact, Russian doctrine calls for as detailed a terrain study and analysis as does the doctrine of any other nation. The sole difference between our own and Russian procedures is that we ignore the enemy as an objective, whereas the Russians recognize no other objective. Even in their defensive doctrine, the Russian operation order directs the destruction of all enemy forces that attack.

One of the oldest adages of war is that to be successful, military forces must know the strengths, weaknesses and habits of the forces opposing them. The preoccupation of US forces with terrain, and particularly high ground, was well known by her enemies in WW II. Consequently, the Germans and the Japanese both utilized the reverse slope defense because of their knowledge of this preoccupation. Throughout the conflict in both theaters, but particularly in the Italian campaign, the reverse slope defensive position proved to be the hardest for the Americans to dislodge. US commanders were too used to fighting the terrain. They believed implicitly that high ground commanded the surrounding terrain, in spite of repeated examples to the contrary.

The Korean War was no different. The Americans clung to the high ground principle. To cite one instance of the fallacy of the high ground concept, take "Outpost Hedy." Marines of the 1st MarDiv had the top and the Chinese Communists had the bottom. The Chinese Communists had relative freedom of action but no one could move on the top. No matter how hard they tried, the Marines could not dislodge the enemy on the low ground, 35 to 50 yards in front of them.

Nothing was spared in attempts to dislodge the enemy in front of 'Outpost Hedy." After heavy artillery and mortar preparations, the troops assaulted the enemy unsuccessfully. Next, a tank went forward of the MLR and fired its 90 mm projectiles from point blank range. Again the assault was repulsed. An 8" howitzer bombarded the position methodically for a day and night. The following morning planes from MAG 33 came in and dropped 500-pound bombs. Following the initial run, the planes strafed the enemy position. The Marines followed that terrific preparation with another attack. It also failed. Everything was tried except a different approach. Each attack was made from the high ground. The Marines fought the *terrain* using the high ground principle and the Chinese were waiting for them every time. Maybe an attack from the low ground would also have failed. We'll never know. Such an attack was never tried.

In sharp contrast with "Hedy" was an incident that happened in the Korean Marine Corps sector at about the same time. One KMC outpost was manned by a platoon that fought the *enemy* instead of the terrain. The outpost was situated on a small hill, between 30 and 40

Mission: Destroy or capture the enemy force on hill 407

meters high. This little hill had been lost and retaken 2 or 3 times, each time with heavy casualties. It looked like the Chinese Communists would keep pounding at the outpost until they got it for good.

The attacks on the outpost were all typical of the limited objective attacks that the Communists launched during the static warfare of 1952. They were always conducted at night. Their infantry followed an intensive artillery and mortar preparatory barrage so closely that they received casualties from their own preparation. They took a lot of casualties, but they generally took the terrain that they wanted.

The KMC defense was also typical of the times. When the Communists started shelling the position, all hands went into bunkers and stayed there until the bombardment was over. Once the barrage stopped, the men ran out of their bunkers and manned their machine guns or fighting holes. More often than not, they found that the enemy had already gotten into their trenches in overwhelming numbers. The inevitable resulted and the position was lost. Usually there were very few, if any, survivors of the defending outpost platoon.

As soon as they could be mustered, counterattack forces of KMCs would be ordered to slug it out with the enemy. These slugging matches always lasted for hours, and sometimes they went on for days, before the position was recaptured.

In early November 1952, a new platoon took over this much disputed outpost. The new platoon leader made an estimate of the situation and decided to fight the enemy and not the terrain. He was a brave man. He flew right in the face of tradition. He prepared a plan and rehearsed his platoon in the plan. Briefly, he planned to abandon the high ground when the preparatory shelling began and to place his platoon on the low ground approaches to his position. Half the platoon was placed on each side of this hill in a half moon shape. Disposed in that manner, he expected to be safe from the preparatory fires of the enemy. He also expected to be able to catch their assaulting infantry in a withering cross fire. The platoon leader made the usual arrangements for prearranged, on call artillery and mortar barrages. However, he did not arrange for any "box me in" fires.

A few nights after the platoon's rehearsal, a heavy barrage started on the outpost at about 2300. Everything went exactly according to plan. The KMCs abandoned their trenches. The enemy attacking force was estimated to be a company. As it reached the base of the hill, the enemy artillery and mortar fires lifted and the KMC platoon opened up. The Chinese Communists were completely routed and so badly demoralized that they failed to return for their dead. There weren't enough of the enemy company who escaped, to take the dead with them.

Doubtless there are many other examples like the foregoing. Examples of outfits that fought the enemy and not the terrain, as well as examples of outfits that in effect ignored the enemy and fought only the terrain. Operation orders should name the enemy as the thing to capture or destroy and not some hill or other piece of critical terrain. We should leave no doubt in any Marine's mind that their combat mission is to capture or destroy the enemy. This does not mean that we ignore terrain. Far from it. We must study and evaluate the terrain continuously but we must fight the enemy.

The extended distances between units, caused by atomic defense and the tremendous areas that will be by-passed in the vertical envelopments of the future, make fighting the enemy even more important than it has been in the past. We can no longer march shoulder to shoulder from the water's edge, physically covering every foot of terrain and thereby finding the enemy. Neither can the enemy fortify and defend in massive formations. Therefore, we must continuously seek out and destroy the enemy. The possession of high ground is nice, but when a squad of enemy soldiers can plant atomic mines or employ atomic demolitions on vital installations such as airfields, dumps, port facilities and helicopter hard stands, the capturing or destroying of that enemy squad is a much more important objective.

The time has come to retire the phrase, "seize, occupy, and defend." It has served the Marine Corps faithfully. The thing to do in the future is to capture or destroy the enemy military forces and individuals. Operation orders must tell Marines to *fight the enemy* and we must teach the same thing. USMC

Col Prickett graduated from Basic School in 1938. Tours of duty aboard the USS Maryland and in Shanghai with the 4th Marines followed. Captured by the Japanese in 1941, he was a POW until 1945. He attended the Command and Staff School at Quantico in 1946 and then served with the 6th and 8th Marines. In 1953, he was G-2 of the 1st Mar Div, after which he was appointed Chief, Advanced Base Problem Section, MCS, Quantico. He is now assigned to FMFPac.

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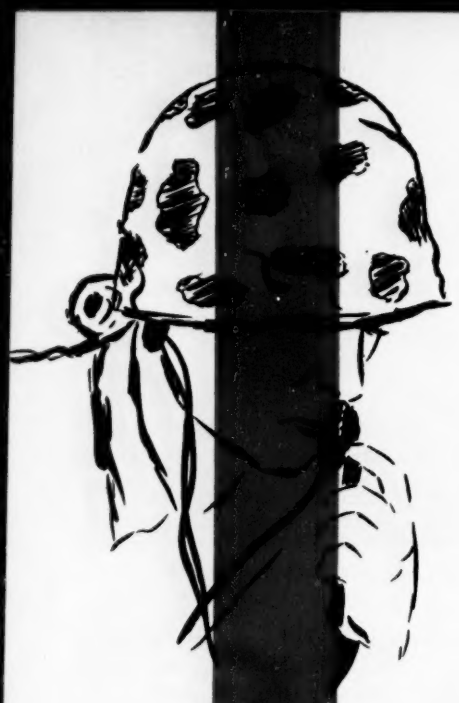
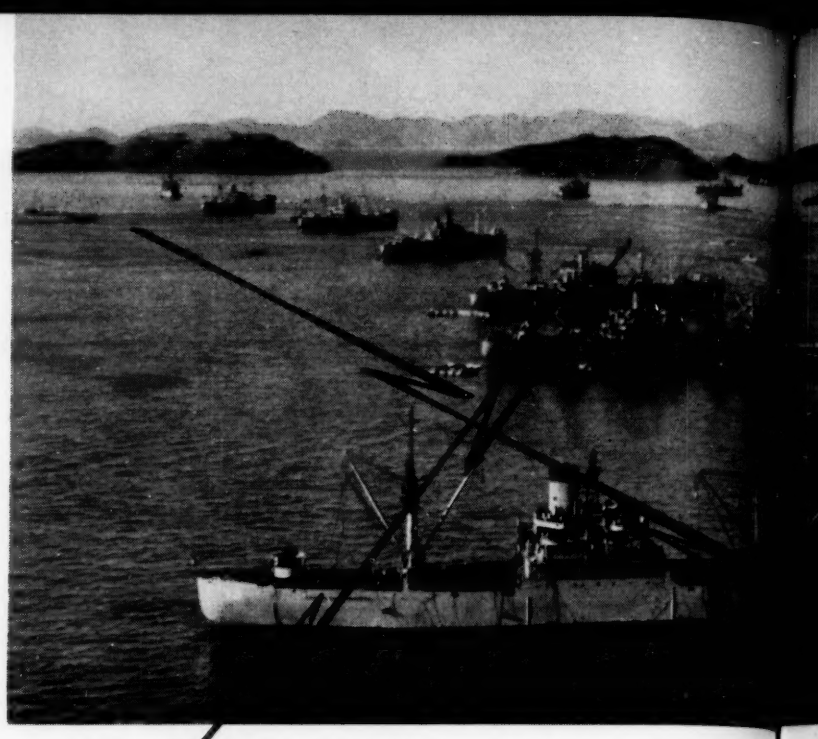




RADIO

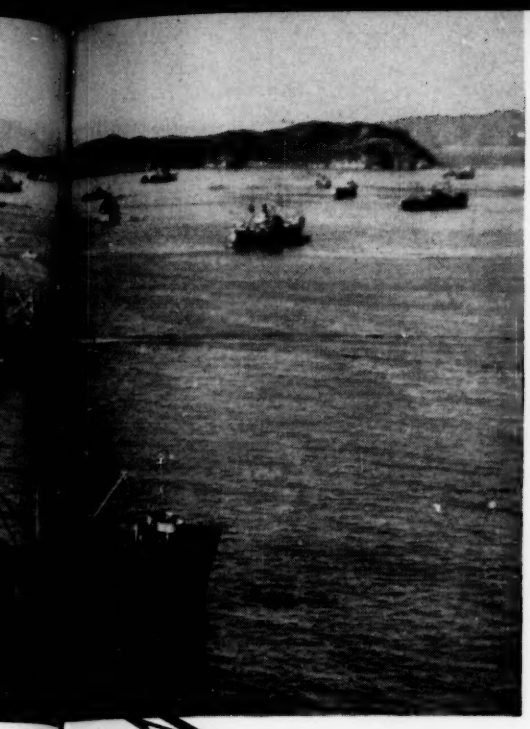
Introducing radio-relay and what it can do for you.

A survey of its capabilities and limitations

FOR MANY YEARS COMMUNICATIONS has tended to be the whipping boy in the critiques of major amphibious exercises. To a somewhat lesser degree, the same was true of many of the comments on amphibious operations in WW II and in Korea. Too often, the loud cries of "communication failure" were fully justifiable and were directly reflected in the failure of the tactical situation to respond as planned.

Although there has been some inclination on the part of commanders and staff officers to underrate the adequacy of communications, an unbiased analysis will reveal that the past few years have seen remarkable improvements in the entire communications field. The future holds an even brighter promise. New equipments, now well beyond the drawing board stage and which will be available to FMF units within the forseeable future, can give the Marine Division what it has clamored for since Guadalcanal—a reliable, rapid and integrated communication system, capable of supporting the many facets of an amphibious operation.

One of the most promising of these equipments, and one even now available in the interim equipment



Radio Relay

By
Maj G. M. Bryant
and
Capt D. H. Tinius

stage, is radio relay.

The term "radio relay" may or may not be a familiar phrase, depending to a large extent on how recently the reader has served in the FMF, or otherwise been associated with the equipment. As a matter of fact, the term itself is something of a misnomer. The first radio relay available to the Marine Corps was what the name implied—a relay system. Its bulky equipment was devised as a 100 mile system, with a radio terminal at each end. A number of relays along the way, amplified and passed on the signal. Today, with lightened and improved equipment, the usual employment is without the relay equipment, except when distances of over 30 miles between terminals are required.

Essentially, radio relay or radio link (as it is sometimes referred to) is a radio system which the user employs in exactly the same manner as a telephone, eliminating the "over and out" and other radio procedures. The radio relay terminals are wired into the unit switchboard and, with the present equipment, afford 4 talking channels.

These radio channels between switchboards serve the same purpose as 4 laboriously installed and maintained wire circuits. In addition, 4 teletype circuits can be superimposed, using the same 4 talking channels and providing simultaneous teletype communications, without interrupting the voice circuits. To accomplish all of this, only 2 radio frequencies are required.

The present interim equipment, mounted in a ¾ ton truck and trailer, carries the nomenclature AN/MRC-62 for the terminal equipment and AN/MRC-63 for the relay set. The new equipment (which may be available in the next fiscal year) is the AN/TRC-27, which will provide 8 voice channels instead of 4 and which will be light enough to allow it to be jeep-mounted.

This is the equipment. What will it do for us? How can we best employ it? What will it replace? What are its limitations?

Regardless of the varied and modern concepts of amphibious warfare, required by the possibility of nuclear weapon employment, the amphibious operation itself still includes the familiar phases of embarkation, movement to the objective, ship-to-shore movement, and assault.

This article will endeavor to show how the present radio relay equipment can be employed in each of these phases, and how it can supplement other channels in integrating and solving our communication problems.

During that chaotic period when the landing force is in the process of breaking up camp and moving itself and its tons of equipment aboard the many ships of the naval task force, reliable and rapid communications are a requisite. There is little doubt but that telephone channels provide the simplest and most efficient method of communication between the base camp and the port of embarkation. Commercial telephone lines may or may not be available, but even when they can be procured from local telephone companies, the cost of leasing is frequently exorbitant and the service may leave something to be desired. Admittedly, when the garrison area and the port of embarkation, as well as the interconnecting road network, are all under the control of the military (as on an island base) the installation of a field wire system for embarkation may be within the capability of the embarking unit. However, this is a time-consuming task; additionally, it expends wire equipment which may be needed later in combat operations.

The An/MRC-62 mounted in a ¾-ton truck

SB-22 switchboard — no more "over & out"

Voice or CW radio circuits can be established to the embarkation point, but radio, with its inherent limitations, fails to provide the personal contact and flexibility required of a communication system to support the out-loading.

The answer is radio relay. With one terminal set at the garrison camp and one at the port, 4 talking channels can be provided and integrated into the base telephone system. For amphibious exercises of the 2d Mar Div, a standard radio relay installation is established to provide continuous telephone service between Camp Lejeune and the port of embarkation at Morehead City, N. C., some 30 miles distant. The installation described below can be considered typical in supporting the requirements for communications during embarkation.

The 4 talking channels of one radio relay terminal are wired into the base switchboard that serves the entire camp area. At the port, the 4 channels of another terminal set are tied into a field switchboard (SB-22), centrally located in the dock area. Thus, 4 trunk circuits are provided between switchboards. Within the port area itself, local telephone lines are laid to the various docks or piers; to the embarkation office; to the staging areas; and to any other required points. As the ships arrive at the docks for loading, one or more lines may be connected to the ships' internal telephone systems. If a ship has no internal switchboard available, a field telephone can be put aboard for the ship's embarkation officer. With well-trained radio relay men and wiremen, this entire system can be installed in approximately 4 hours.

It is easy to visualize the versatility of this radio relay system. Unit embarkation officers are afforded telephone channels to each ship, to the staging areas and back to the base camp. Until its departure from the garrison area, the landing force headquarters has been provided with direct telephone facilities for control of the entire loading opera-

Maj Bryant, a graduate of the Command and Staff Course, Naval War College, has had wide experience in the field of communications. He has been communications officer for the following units: 1st Marines, FMF WesPac; 3d Sig Bn, 3d Mar Brig; 12th Marines; 11th Marines; CommCo, 2d Mar Div. He states, "I was prompted to write this article, when I realized there was a lack of knowledge about radio-relay on the part of many young officers and NCOs." Its operation and potentialities should be understood by all.

tion. If more than one port is used for embarkation — as might easily be the case — the value of radio relay would be even more enhanced, since it would allow all of the required communications to be fused into a single system.

As mentioned before, this system has been used with proven success in the Camp Lejeune–Morehead City area. At other staging and embarkation areas, different problems may arise and variations of this system may be necessitated. Used imaginatively, however, radio relay has the flexibility and capability to meet and solve these problems, regardless of the geographical location.

The problem of communications among troop units of the naval task force, during the movement to the objective, is one that has never been satisfactorily solved. Radio silence is curtomarily — and necessarily — imposed, precluding the use of most troop communication equipment. Any messages between the embarked landing force units must be passed over naval channels — not always a satisfactory procedure.

The employment of radio relay during this phase would go far toward providing the sought-for solution, since this equipment can be operated under conditions of normal radio silence. The advantages accruing from the use of radio relay during the movement to the objective have been demonstrated in recent amphibious exercises. Direct telephone communication is available between the landing force commander and his landing team commanders aboard other ships, providing a rapid and personal means of contact. Using radio relay, new developments in the tactical or intelligence situation can be brought swiftly to the attention of those who need to know. New plans can be discussed without the necessity of going through naval channels. Other advantages of this type of communications are obvious. For example, if the time factor required an immediate departure from the area after the rehearsal, any resultant change in plans could easily be disseminated by telephone through the radio relay system.

It would be ideal, of course, if every ship employed to transport elements of the landing force had radio relay terminals installed as components of the ship's equipment and tied into the ship's switchboard. This would enable a commander, whether operating from a War Command, his stateroom, or the staff officer's wardroom, to pick up the nearest ship's phone, dial the operator, and ask for whichever of his subordinate units he desired and with which he had a radio link. At the present time, however, only the AGC's and a few APA's have radio relay terminals and antennas included in their communications systems.

This limitation on installed equipment need not necessarily restrict the use of radio relay by embarked troops, since it is entirely feasible to deck-load the equipment and to lay 4 telephone lines from the deck location, terminating in a field switchboard operated from troop space. Local telephones may be installed from this switchboard to required troop offices, staterooms or operating areas.

It is not intended to present radio relay as the entire answer for interunit communication during this phase. There are technical limitations inherent to the equipment. The primary one is that one terminal will provide talking channels with only one other station, unlike voice or CW radio, which can net an almost unlimited number of stations. A Division Commander, desiring radio relay links with 2 of his Landing Teams and with Amphibious Troops headquarters, would require 3 terminal sets installed or deck-loaded.

Some difficulties may result from the antenna installation of deck-loaded equipment, since 2 antennas (one for transmitting and one for receiving) are required for each terminal. Engineering by the technicians may be required to eliminate interference with other radio channels, but this does not present an insoluble problem.

For purposes of this article, the ship-to-shore movement and the assault phases of the amphibious operation are considered together. These 2 phases, especially from the aspects of the communication requirements, cannot easily be separated; they dovetail and overlap. Communications which may be established primarily to support the ship-to-shore movement, may well supply the early needs for assault communications.

The history of amphibious operations and exercises has been punctuated by a dire need for a better and more cohesive system of communication during this critical ship-to-shore and early assault phase. This necessity has been emphasized as the amphibious operation evolved from the relatively simple movement to the beach at Guadalcanal, to the highly complex, dispersed, combined, landing-craft-and-helicopter movement of today. The number of radio nets—functional, tactical, command, and administrative—has steadily increased; unfortunately, though, there are still only a limited number of frequencies available. The larger the task force, the more overcrowded the frequency spectrum becomes. This frequency over-population may become even more intolerable when the unhappy probability is taken into consideration that the enemy may operate in the same frequency bands.

All of this leads to only one possible deduction. Communication tactics, techniques and equipment must not be allowed to stagnate. Further, in order to solve our immediate requirements for communication during these phases, thought and experimentation must be given to extending the capabilities of

Capt Tinius served 3 years in the Army Air Corps during WWII. During that period of his military career, he attended 7 Electronics schools. After discharge, he attended the University of Tampa and joined the Marine Corps Reserve. He was commissioned a 2dLt in 1951 and was assigned to MAG 24 at Cherry Pt as Electronics Officer. Following this, he completed tours as: Wing Electronics Officer, 3d MAW; Comm Officer, MWSG 17; Radio-relay Officer, Comm Co, 2d Mar Div. Now completing his work for a degree under the College Degree Program, he states he wrote this article because of "A belief that the potentialities of radio-relay are unlimited and the answer to considerable communications difficulties while the landing force is afloat."

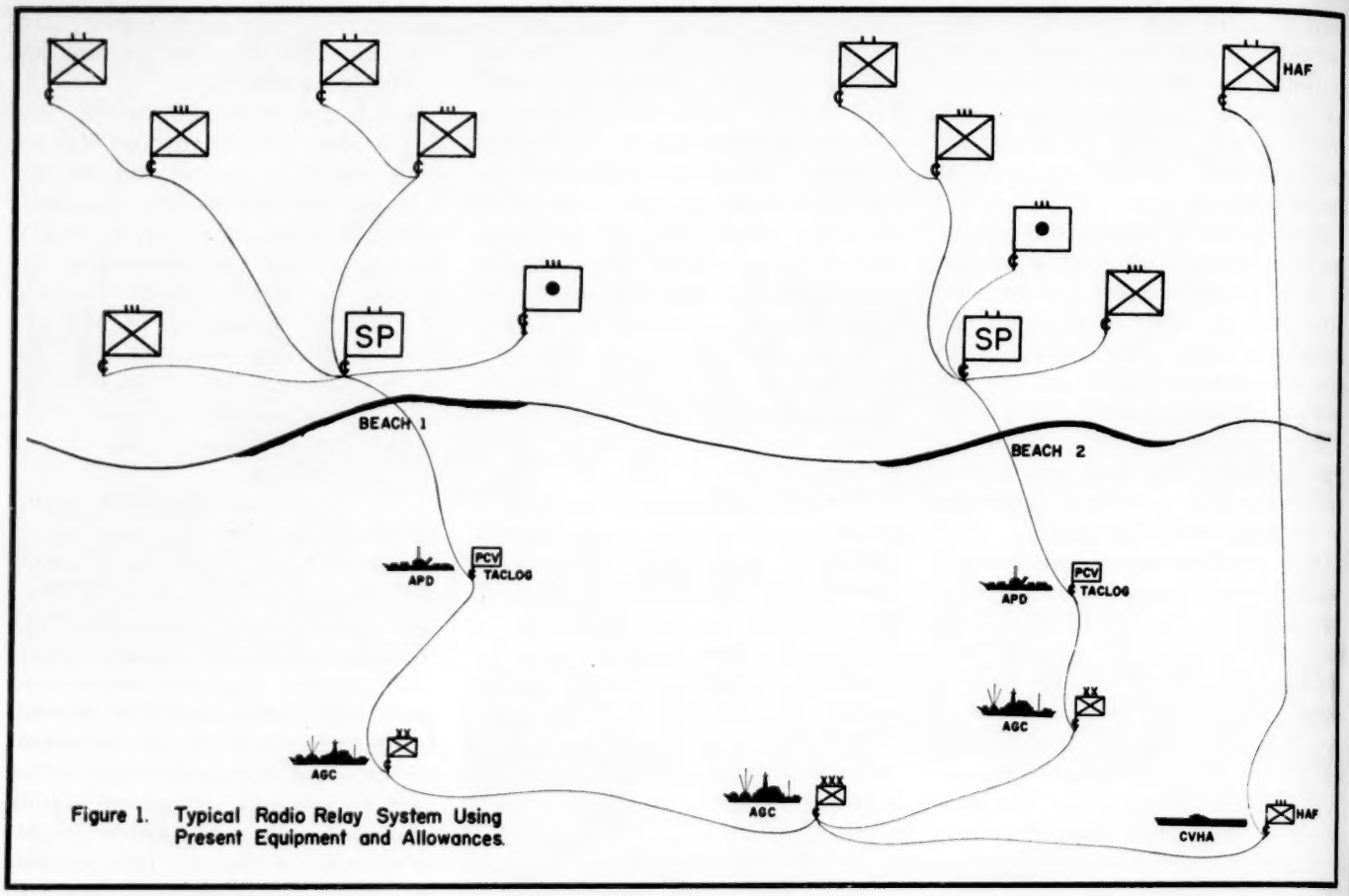


Figure 1. Typical Radio Relay System Using Present Equipment and Allowances.

equipment now in the hands of, or available to, the using units. Radio relay is now in use, but the full tactical potentiality and significance of this equipment has not been fully explored. Employed to its fullest capacity, radio relay could assume a major portion of the burden of functional and command traffic now passed on many diversified nets. It could channelize this traffic through well-defined and integrated communication routes.

For clarification and to demonstrate what is meant by an "integrated" communication system, a comparison may be drawn between a division radio system and a division wire system. The radio system consists of a number of different radio nets, operated for different purposes and with different types of equipment. It includes different stations on each net. There is no opportunity for a station operating on one net to operate simultaneously on another. In a word, the radio system is heterogeneous.

A division wire system, on the other hand, is homogeneous. Using a local telephone at the infantry company level, a call can be handled through switchboards at the various echelons, to reach any other local telephone in the division. The system can handle communications up and down the chain of command, or laterally from one command to another and can handle functional, administrative or tactical traffic.

What is needed during the ship-to-shore and early assault phases is an integrated communication system, similar to a division wire system. Naturally, it is out of the question to install wire lines between all units afloat. Some experimentation has been made in the field of off-shore wire laying as far out as the primary control vessel, with varying degrees of success. The disadvantages of this type of communications may be apparent; problems arise as to the responsibility for the police of the lines after they are laid; the actual installation is tedious and time-consuming, requiring hundreds of weights (such as tin cans filled with concrete) to keep the wire lines on the ocean floor; splices must be meticulously waterproofed and even then may break down under pressure of the water.

But radio relay, using equipment presently in the Tables of Equipment, can go a long way toward fulfilling the requirements of this integrated system afloat, analogous to a division wire system ashore. When the new AN/TRC-27 is available to the FMF, and companion shipboard equipment is operational, commanders of amphibious forces and troops will have at their disposal a complete telephonic system that can link the Amphibious Task Force Commander with just about any unit of the force, whether afloat or ashore.

Figure 1 shows an example of what can be accomplished with the present equipment and allowances (including FMF pool equipment). It is not intended in either of the diagrams accompanying this article to present any solution to the tactical problems of amphibious operations; the diagrams are illustrative in nature only.

In Figure 1 we see that the Commanding General Amphibious Troops has direct telephone communications with each of his Division Commanders. The system extends down through the TACLOG group aboard the Primary Control Vessel to the Shore Party and the regiments ashore. Equipment is now actually available for all of these

terminals and can even include one battalion of each of the infantry regiments (which might also serve as an alternate regimental command post). The installation of terminals and switching centrals at the shore party and the TACLOG serve dual purposes. First, of course, they may be used to support logistical requirements. Secondly, they act as relays to shorten the links between Division headquarters aboard an AGC some distance at sea, and the infantry regiments which may be some miles inland. It should be emphasized that each of the links shown on the diagram actually consists of 4 telephone channels, upon which can be superimposed one to 4 teletype circuits. If desired, at the shore party and at the TACLOG, 2 of the lines could be permanently plugged through, to furnish direct communication from the regiment ashore to the Division Commander afloat.

Although Fgure 1 shows this radio link system at only one specific period of time during the developing tactical situation in the ship-to-shore and assault phases, the system is equally applicable for the entire operation. Terminals for 2 links are now available on most AGCs and some APAs; more terminals can be deck-loaded to provide links during the early phases, before the regimental command posts shift ashore. It is true that there must be a short disruption of communications when deck-loaded equipment is broken down for transportation ashore. But there is no reason why the vehicular equipment cannot be operated in landing craft of the LCM or similar type, thereby providing for continuity of communication during the shift of the regimental command posts ashore. When installation of the division command post ashore commences, the terminal sets shown at the shore party CP are relocated at the division headquarters area to provide links to the regiments. An additional link may be established from the division headquarters ashore to the AGC, to facilitate in the shift of control ashore and for later logistical and/or tactical communications to naval elements afloat. Although not shown in the diagram, spare sets can be located at the alternate division CP, pre-wired in to act as division terminals in the event the division CP becomes a casualty.

Radio relay can be used to great advantage when a Helicopter Assault Force is included in the task organization. If this force is initially under the operational control of the Commanding General Amphibious Troops, radio relay can provide him with a direct and flexible communication system. When control of the helicopter lifted troop unit reverts to the division or regimental level, the link is merely shifted to that level, with no resultant break in communications. The present equipment, when removed from its organic vehicle, is helicopter transportable, although it requires 2 HRS's to lift a complete terminal with power supply and operating team. When the AN/TRC-27 is adopted, with its decreased physical dimensions and weight, helicopter transportability will be even more feasible. In fact, it is not fantastic to conceive, in the relatively near future, of a command helicopter with installed radio relay facilities providing the commander with in-

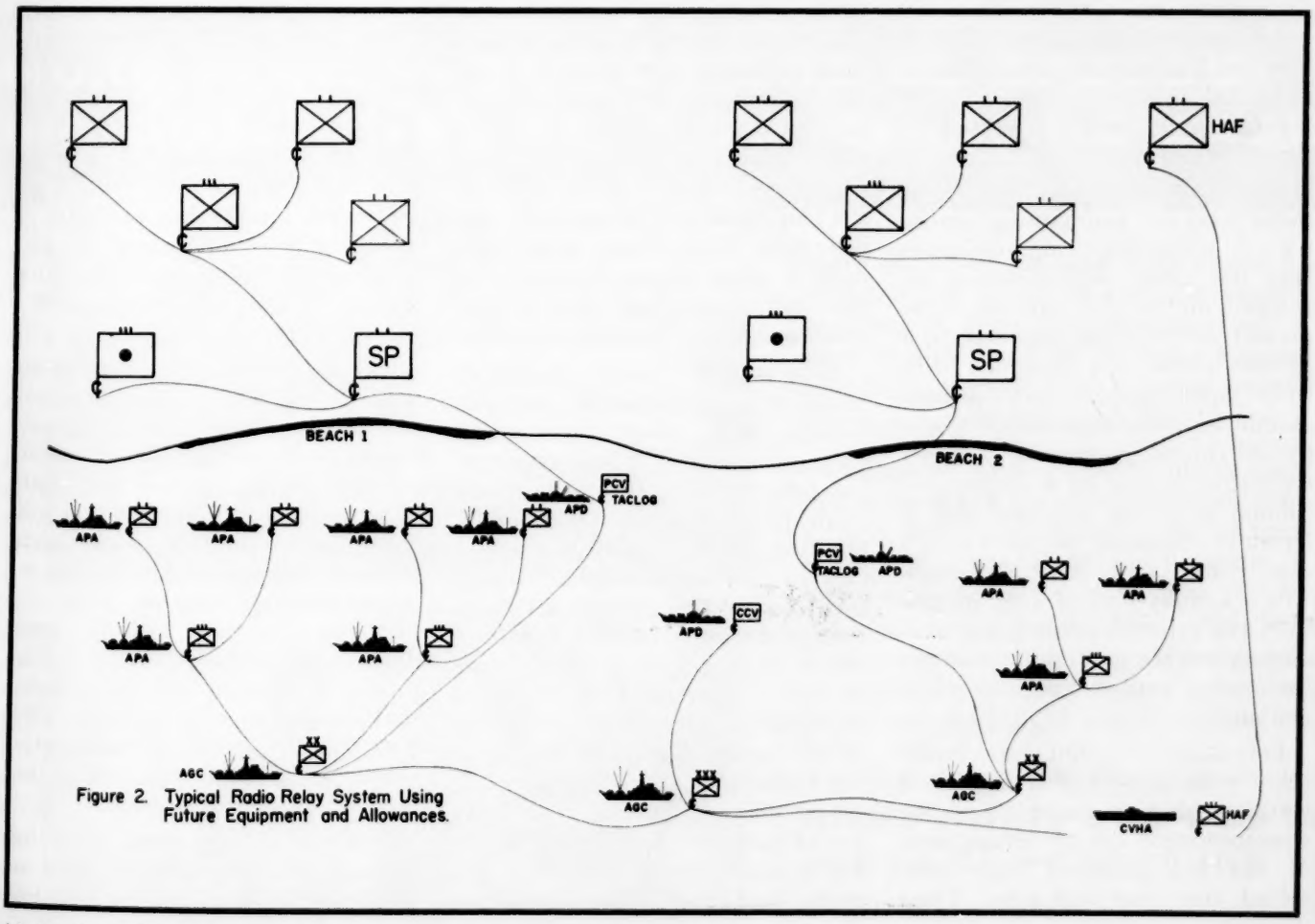


Figure 2. Typical Radio Relay System Using Future Equipment and Allowances.

flight telephonic contact with his units on the ground or in other helicopters.

Figure 2 shows how the radio link system can be expanded when the new AN/TRC-27 equipment is distributed. With the increased allowances of this equipment and with its increased portability, the possibilities for employing radio relay become almost limitless, both during the ship-to-shore phase and in ground operations ashore. With foresightedness in planning, radio relay should be able to fulfill almost any conceivable communication requirement.

The newer concepts for the employment of a landing force, in warfare using nuclear weapons or even under nuclear threat, all stress dispersal of one type or another. Such dispersal of forces may very well preclude the construction of a division wire system as we have known it in the past, since the area between the dispersed units may take on the guise of a "no-man's land," actually undefended and through which wire teams would be unable to proceed. Under such conditions, radio relay is more than an able substitute. During the recent 2d Mar Div exercise, "Operation Readiness," no field wire was laid forward of the division command post; in its stead radio relay furnished reliable communication by telephone.

Another unique employment of radio relay for maintaining continuous telephonic communication with the assault regiments was developed during this exercise. The present AN/MRC-62 terminal, in a ¾ ton truck, was equipped with whip type antennas and operated mobile with one regiment in a motorized column movement. Another regiment, moving in a mechanized column of LVTs, was furnished a terminal mounted in an LVT-P5 also using whip type antennas. These 2 links worked very successfully and proved extremely useful in augmenting the usual radio channels for control and exchange of information.

Let's make one point clear. Radio relay is not presented as a panacea, easily capable of curing all of the communication ills. Although some of the old problems have been solved, new ones will arise. These are not problems impossible of solution; neither can they be disregarded or lightly glossed over.

Operator training is an ever-present problem in radio relay, as it is in all fields of communications. Current tables of organization do not provide for a specific radio relay operator, nor is there such an MOS. It is felt that the increasing use of radio relay will call for a more inclusive MOS. Its qualifications will be primarily a familiarization with radio relay and a basic knowledge of telephone and radio communication.

In the matter of radio relay equipment pre-installed aboard naval vessels, the question of responsibility as to operation and maintenance arises. Clear-cut and well delineated areas of responsibility will have to be worked out to forestall any misunderstandings between the embarked troops and the navy elements. Normally, there will be little requirement for the initiation of the radio relay system until the landing force is embarked. It logically follows, that since the system will primarily support these embarked troops, it is they who should accept the responsibility for operation and maintenance while aboard. There would be several advantages in having landing force personnel operate the system. The operators would be more cognizant of the landing plan and with troop operations in general; they would be familiar with the names of the landing force staff and with unit call signs; they would undeniably have a more personal interest in maintaining continuous and reliable communications among troop units.

Even with the limited amount of radio relay equipment installed aboard ships today, interference from other shipboard electronic gear has presented a very real problem. High power CW circuits, receiver blocking and harmonics of frequencies, all play havoc with radio relay transmission and reception. Interference during a combat operation would be particularly troublesome on D-Day, when the flow of traffic is the greatest. One possible solution to the interference problem may be the reduction of the number of other radio circuits, since radio relay would have the capability of assuming a much greater portion of the traffic load than is now the case. These other nets would not necessarily have to be abolished entirely but they could at least be placed in a "stand-by" status.

The ship's location with respect to other terminals also has its effect on the operation of radio relay, in that as the ship maneuvers or swings at anchor off the beach, the required line-of-sight path is interrupted by the ship's superstructure, causing a corresponding decrease in the signal strength. For an efficient system, an antenna needs to be developed that will be directional, above the superstructure and self-sensing; that is, the antenna should automatically "sense" or seek-out its distant station regardless of the ship's position.

Finally, there is the question of familiarity and understanding of the capabilities and limitations of radio relay by commanders and their staffs. In order to properly utilize any radio relay system, this basic knowledge is imperative. For example, security considerations cannot be ignored; radio relay is essentially radio with the operating characteristics of telephone and as such it is susceptible to enemy efforts of interception, deception and other counter measures. The directional—rather than omni-directional—characteristics of radio relay do, however, render it somewhat more secure than ordinary radio.

These, then, are some of the problems that must be dealt with if we are to employ the full potential of radio relay in supporting the amphibious operation. Compared with the results, the problems are small.

It is hoped that this article will draw attention to the tremendous (and to a great degree, unrealized) possibilities of radio relay in providing an integrated system of communications for the landing force both afloat and ashore, and that it will arouse further interest in the minds of those who see a need for this reliable, integrated system. Some experimentation has already been done; more is badly needed. The present equipment has very definite limitations, but with the new AN/TRC-27, the span of the radio relay system will be almost limited to the imagination of the planners.

The day will yet come when the communicators are not red-faced at the critiques. USMC

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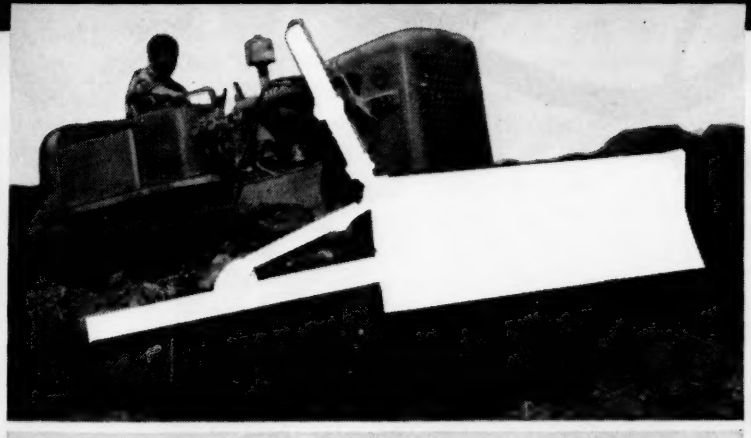

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Goodbye Able Dog

By LtCol J. F. Bolt

Does the advent of the A4D presage the end of close air support as we have known it in the past? Definitely not, says this experienced Marine aviator.

"YOU CAN'T TELL ME A JET CAN give close air support like that," said an infantry veteran of 2 wars. An AD-5 had just demonstrated its ability to deliver the goods by firing several dozen 2.75" rockets on one run and by dropping a dozen bombs on the next. This officer, standing by the Quantico impact area, was certainly correct. The A4D, which will soon start replacing the AD in our attack squadrons, cannot carry the load or the wide variety of ordnance carried by the Able Dog. The A4D will use more fuel per sortie, have less time on CAS (close air support) station, probably be as difficult to maintain and will need longer runways.

Are the aviators throwing close air support out the window? How about giving me a few minutes of your time in which to explain why we aviators believe it is necessary to replace a proven plane with an unproven newcomer of a different breed.

If the AD did the job for us in Korea why should we get rid of it? Well, there certainly isn't any doubt that the AD did an outstanding job of close air support in Korea. It is a less well known fact that the usefulness of the AD was diminishing during the last year of the Korean War because of the increased enemy flak. During the latter part of 1952, in MAG 12 and aboard the carriers, the loss rate per sortie for ADs reached a serious level. The availability of pilots and aircraft was being reduced. At that time the following steps were taken to lessen the loss rate.

a. The Bureau of Aeronautics, under a "crash" program, added armor plate to protect the vital areas of the AD. On the carrier based ADs, the several hundred pounds of armor plate cut the bomb load by just that much. The range, endurance and speed were reduced — stalling speed was increased. With the armor plate added, it required more sorties for the carrier based aircraft to put a given tonnage of bombs on the target. The more sorties you fly, the more losses you have. The armor reduced firepower and mobility. Armor may be well adapted to battleships and tracked vehicles, but in aircraft it starts a vicious circle and the end result is always reduction of performance.

b. Pilots were ordered to make only one run (attack) on interdiction targets. This was done because the bulk of the losses were occurring during the second and third runs, after surprise was lost and the AAA gunners were zeroed in. The one-run tactic did a lot to reduce losses, but it also reduced the effectiveness of the wide variety of ordnance carried by the AD.

c. Except in unusual cases the ADs were not employed against heavily defended interdiction targets.

d. The minimum recovery altitude was raised. This increased the

range for the AAA and small arms fire and made it less dangerous. It naturally had a similar effect on the bombing accuracy of the AD. This meant fewer guns knocked out and more chance of bombs on friendly troops.

The Direct Air Support aviator is on the job to help win the ground battle, but he knows that until a satisfactory degree of air superiority is won, he can do little, if anything, to provide the support that is required by his ground contemporaries. If WWIII comes, the AD may be fine for the morning's CAS but who will give the afternoon's CAS? If the enemy unleashes a modern AAA battery against the morning strike, there might not be any ADs remaining.

Have you ever seen a modern AAA battery in action? If you have, there is no need to explain why the AD is going. In Korea and WWII, the enemy didn't have automatic antiaircraft artillery with a potency anything close to these batteries, but he was still able to inflict enough casualties to force the changes in tactics previously mentioned. With about 3 times the effective range and altitude of WWII automatic AAA, these guns have 3 to 4 times the rate of fire of WWII guns of a comparable caliber. Sweden and Switzerland are neutral, non-NATO, countries that have offered to sell us, and presumably anybody else, good automatic AAA of a heavy caliber. The Swedish Bofors 40mm was our standard AAA gun for over a decade. There is no doubt that an enemy has, or can get, good automatic heavy caliber AAA.

Assume a situation where our Marine Division is fighting a conventional weapons war. Our division front is 15,000 yards. We are opposed by 3 enemy divisions, each of which has organic to it a modern AAA battalion. We want a CAS strike on the enemy division's reserve. The FAC (forward air controller) gets 8 AD-6s, with twelve 250-lb. and three 1,000-lb. bombs each, for the mission. These planes cannot carry this bomb load above the maximum effective altitude of the enemy AAA. Their speed will be 160 knots or so, unless they use a high speed approach. If the high speed approach to the target is used, they will lose altitude and will be at a closer and more effective range for the AAA guns. No matter how you work the air attack, it will be difficult to prevent the planes from being under the overlapping fire of 3 battalions of AAA for at least one minute. In one minute these guns can fire over 350 rounds of VT-fuzed ammunition at each and every AD in the flight. Without a lot of probability statistics, it is safe to say that these planes won't average many missions. Let's throw into the problem 3 enemy guided missile battalions with a performance capability about like our Terrier or Nike. Now our ADs are taken under enemy missile fire several miles on our side of the main line of resistance, further reducing their chance of getting to the target.

Put these ADs deep in enemy territory, on interdiction or airfield strikes, and the story will be the same — only worse. The ultimate in nightmares would be to use these slow, vulnerable ADs in an area in which you did not hold aerial superiority.

The vulnerability of an airplane to ground fire is inversely proportional to the square of the speed. Double the speed of a plane and it will travel twice as far in a given time. This means you have doubled the amount of space in which an antiaircraft gunner, or radar, can detect the plane in any given time. Not only that, but the plane occupies any one point in space for only half as long. Doubling the speed, in other words, reduces the vulnerability of a plane by about 75 per cent, or makes it 4 times as hard to hit. The A4D more than doubles the speed of the AD.

If you can stay above the maximum altitude of a gun, the gun can't hurt you. The A4D, with a normal bomb load, can overfly the maximum effective altitude of all guns of all caliber. The AD can normally overfly only the guns of 40mm and smaller.

The A4D-1 recently completed its fleet introduction program. Soon they will begin to arrive in VMAs to replace the AD-5s and AD-6s. Most of us are happy to see the change. Happy in much the same manner that the infantry is happy to see the helicopter replace the landing craft for certain functions. Like the helicopter, the A4D won't haul quite as much per trip but it can make more trips per day. The A4D, like the helicopter, won't always keep us from getting shot. It will, however, have the nice feature of keeping us from getting shot at as often and for as long. Most important of all, with it we can do the job and do it more than once.

The A4D is a midget by comparison with other modern military jet aircraft. The wing span is 27 feet, the length 39 feet and the gross weight less than 15,000 lbs. It carries a crew of one and is powered by one Wright J-65 turbo jet engine. It is capable of carrying atomic bombs, rockets, machine guns, missiles and a wide variety of other armament required in a ground support role.

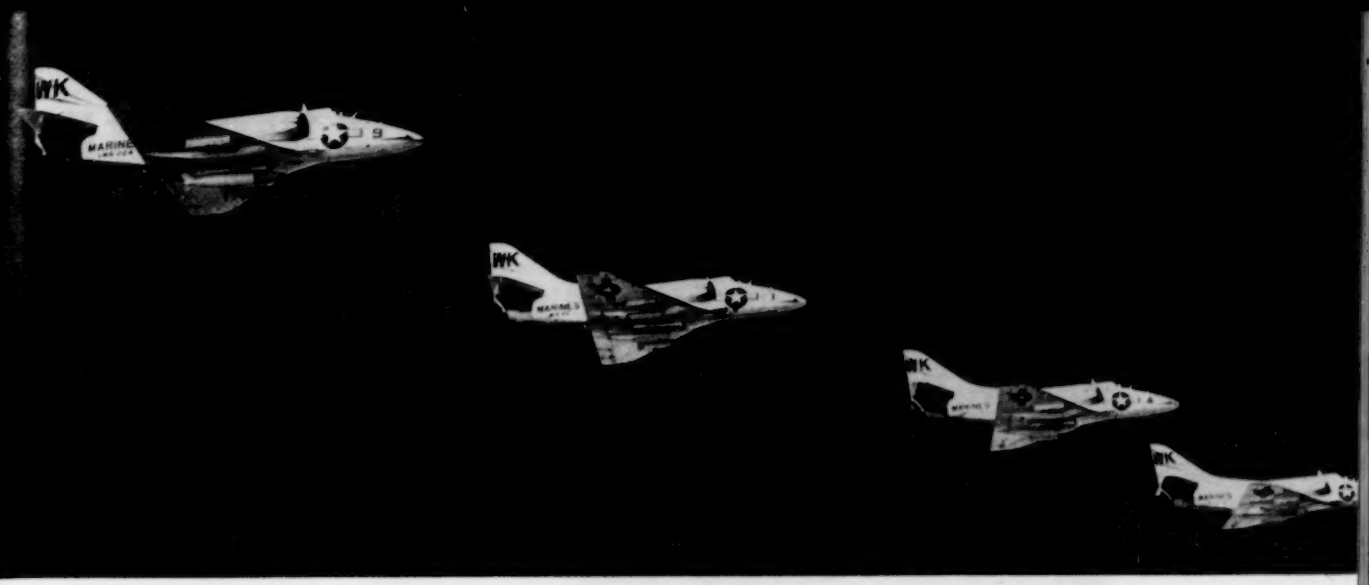
The little A4D gave the world an indication of its performance in October of 1955 when it captured the grueling 500-kilometer closed circuit course record with an average speed of 695.16 miles per hour.

The surface area of the A4D is only one-half to two-thirds that of the AD, depending on the angle from which seen. As a result the A4D presents a considerably smaller target. More important is the fact that the A4D has much less reflectivity for radar. From a head on view, the radar reflectivity of the A4D is about 5 per cent that of the AD because of the streamlining, smaller area, and absence of a propeller.

The A4D Skyhawk is a heavy hauler. It doesn't have as many bomb racks as the AD nor can it equal the take-off bomb load of the AD.

However, the A4D will carry well over two-thirds of the load normally carried by the AD. It will carry this load almost 3 times faster than an AD. The ground turn around time of the A4D is much less, due to its having fewer bomb racks and one-point pressure refueling. On the basis of "tons carried per mile per hour," the A4D is the heavier hauler. The AD was good. The A4D is better.

The number of bomb racks on the A4D, as compared to the AD, might appear to be a major deficiency in the CAS role. A fewer number



The A4D is small when compared with other jets, but it packs a mighty wallop.

of racks are needed on the A4D because of the successful packaging of the 2.75" and 5" rockets. The A4D can carry as many 5" rockets as the ADs normally carried in Korea.

The A4D has fewer forward firing guns than did the AD, but the rate of fire of the new 20mm gun greatly exceeds the rate of fire of the Korean AD's 20mm guns. Rate of 20mm fire for the 2 aircraft is almost the same.

A frequent criticism of jet fighter-bombers in Korea was their short time on station for CAS. The jet planes used in Korea were built as fighters. In fighters, more emphasis is placed on altitude and rate of climb than on range or endurance. When these fighters couldn't cut the mustard against the Russian built MIG-15 they were used as bombers. They were based at the farthest airfield in Korea from the 1st MarDiv. They had to travel 3 times the distance in going from K-3 airfield to the 1st MarDiv, as did the ADs and the F4Us based at K-6. Time that could have been spent on station, if they had been based at K-6, was spent on the extra 100 miles to the division. It is interesting to compare the A4D to these Korean fighter-bombers, the F9Fs. The A4D could fly the same CAS mission that the F9Fs flew and stay on station 3 times longer.

For the ground alert, on-call status in CAS, the A4D is incomparably superior to the AD because of the difference in speed. It is possible that our aircraft will provide a large part of the anti-tank protection of our divisions in the future. The speed with which large numbers of aircraft could arrive on station would be very critical in the anti-armor role. The A4D can get there is less than half the time the AD requires.

In maintenance the A4D may be an improvement over the AD. The simplicity of the design was demonstrated recently when the A4D completed its Fleet Introduction Program and required 50 per cent less maintenance time than any aircraft previously evaluated.

Sadly enough, the A4D is not a 100 per cent gain for better CAS in the Marine Corps. The longer runways and more fuel it will require, are part of the cost of the increased performance. Increased support seems to go hand in hand with increased performance. It doesn't make any difference what you consider; it can be rifles, trucks or boats, every advance in the state of the art seems to be attended by increased support requirements. If you are old enough you probably knew, or were yourself a partisan of, the trusty '03 rifle, or the mule that needed no roads, or of the man-powered whaleboat. Each of these departed to be replaced by gear imposing greater requirements in supply and support. Yet who today wants a return to the old and the slow?

Let's suppose that in WWIII, someone has dropped the A-bomb in anger. When we consider the capability of the 2 aircraft to deliver nuclear firepower, the A4D stands head and shoulders above the AD. Escape from the bomb blast is a big problem in the delivery of some of the new nuclear weapons. This blast wave travels at the speed of sound. The aircraft "overtake-speed" of the blast wave, can be figured by subtracting the aircraft speed from the blast wave speed. Thus, if our delivery a/c could escape at Mach 1.0 (the speed of sound), it would be perfectly safe from blast effect on a low level delivery. The blast effect will overtake a plane escaping at Mach .6 twice as fast as it will an aircraft escaping at Mach .8. The radius of effect of some of our new nuclear bombs is so large that the slow AD cannot escape from the bomb blast, while the A4D can escape with room to spare. These are tactical weapons. They are firepower. The Marine Corps can ill afford to neglect additional firepower.

The A4D is part of a trend, the trend to more speed and more firepower. The trend is now several thousands years old and seems to be gaining momentum. Any military service can arrest the trend and stagnate in happy complacency with good weapons of past wars. The Marine Corps has never been complacent and isn't now. We are replacing the ADs as fast as the A4Ds become available and our increased firepower is measured in kilotons.

The A4D was designed by Douglas Aircraft Company engineers who studied our Korean experiences. Many of these engineers went to Korea to get first hand information from pilots, FACs and ground officers. They put our requirements into the design of this plane. Douglas' chief designer summed it up when he said, "I believe the A4D will be to the period ahead what the AD was to the period behind."

US MC

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Future pilots of the US Marine Corps w
flight training at Pensacola, Florida, popularl
of the Air."

Qualified Marine candidates enter seven w
ing which includes such subjects as navigati
communications, engineering and physical
phase, students receive high altitude indoct
chambers and centrifugal force training in a
Both of these are conducted under the close
to reporting to the flight line, they spend m
learning instruments and navigational princi
them to take to the air.

After these preliminaries, candidates are se
the guidance of a flight instructor, learn to fl
American T-28 trainer. From this point on
through various stages from pre-solo flight to

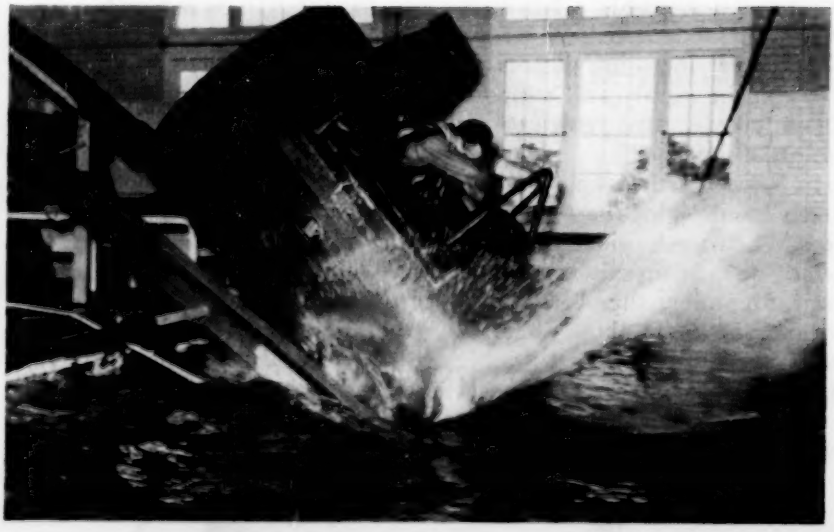
Following basic, these Marines go on to a
fighter or attack pilot in operational aircraft st
jet or the Douglas AD Skyraider.

Following this advanced stage, candidates
and ordered to a Marine Squadron at one of
nental US.

LADEN DOWN

UNDER PRESSURE

THE "DILBERT DUNKER"



VERTICAL THRUST

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da, popularly known as the Navy's "Annapolis

enter seven weeks of intensive pre-flight train-
s as navigation, aerology, principles of flight,
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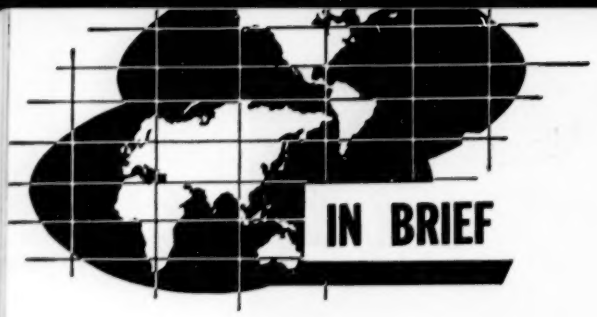
STAYING IN SHAPE

FIRST SOLO

STUDENT AND "MENTOR"

CHECKING HITS

COVETED GOLD WINGS



Electronics has again come to the aid of front-line soldiers in the form of a new television "strip camera" now being perfected by the Hycon Mfg. Company.

This strip camera, the KA-20, is being miniaturized for installation in drone aircraft (right). A drone is small, fast and difficult to hit; it can operate over heavy enemy troop concentrations without risking a pilot's life; and most important, it can be launched and recovered from any sort of terrain.

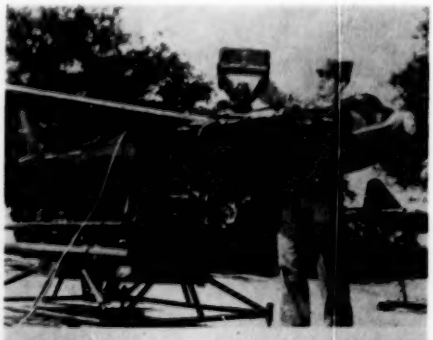
The KA-20 weighs only 17½ pounds and produces photographs 9" x 9" without enlargement. For night surveillance the camera shutter remains open while an associated piece of equipment automatically ejects a series of flash cartridges.

As each cartridge explodes, a photoelectric cell on the camera detects the reflection of the flash from the ground and automatically advances the film for the next exposure. The Hycon-developed ejector pod has a capacity for 26 flash cartridges, each of which can develop 110,000,000 candlepower in 1/300 of a second.

The Marine Corps Association sword was presented to 2dLt James I. Gatliff of Forsyth, Georgia, the honor graduate of the 1-57 Basic Class, by Lt-Gen M. B. Twining, Commandant Marine Corps Schools (below).

Lt Gatliff graduated in 1956 from Georgia Institute of Technology with a degree in Mechanical Engineering. He has been assigned to the First Infantry Training Regiment, Camp Lejeune, N. C., for duty in the infantry field.

Mrs. Jane Blakeney, formerly Head, Decorations and Medals Branch, HQMC, has recently completed a comprehensive volume containing historical lore of particular interest to Marines. The 644-page book is entitled "Heroes, US Marine Corps, 1861-1955." Included is a complete account of every Marine who has been awarded the Medal of Honor since 1861; ships named for Marine Corps heroes; land and naval battles in which Marines have participated; honors and ceremonies and a wealth of other pertinent material. The foreword was prepared by Gen Lemuel C. Shepherd, Jr., former Commandant of the Marine Corps. Gen R. McC. Pate, Commandant of the Marine Corps, has written the preface. It is available at the Gazette Bookshop for $9.00 (no discount).



A Change in Uniform Regulations (Ref: (a) Para. 49070.1 MCM) — all brown dress shoes, combat boots and service shoes will be shined with approved dark brown polish. Soles and heels may be dressed with an approved dark brown sole dressing. Double or platform soles or heels, leather heels and metal heel and toe plates are prohibited. This order also applies to the Marine Corps Reserve.

The first flight of a tanker version of the C-130 Hercules, designed for the US Marine Corps, is photographed at Lockheed's Georgia Division, Marietta, Ga. (below). The pods attached to wings, containing motor-driven reels and drogues, are for refueling fighter aircraft in flight. Capable of carrying 6,000 gallons of fuel, which will be dispensed through the wing tanks, the Hercules will fly at speeds in excess of 370 mph and at heights of 40,000 feet.

Radar tests by Navy scientists indicate that the Moon can be used for radio relay.

Research was begun in 1951 as part of a long-range project to study the moon by radar. The first experiments involved sending pulses of electrical energy to the moon and back. On 21 October 1951, it was discovered that the moon was comparatively smooth to radar waves, rather than rough, as it appears optically, and so might serve as a relay station for radio communication.

Continued experiments at the same and higher frequencies, which included round-trip transmission of voice messages, have confirmed this discovery and indicate that many types of communication can be carried on via the moon. It was also noted that these experiments gave a value for the distance from the earth to the moon that differed from the distance calculated from optical observances.

Stimulated by this result of the communications experiments, NRL radio astronomers extended the investigation to super high frequencies or microwaves. On February 24 of this year, they "bounced" a 3,000 megacycle radar signal off the moon. These studies confirmed the earlier discoveries at lower frequencies on the moon-earth distance and the reflecting properties of the moon surface.

ED: *See page 20 for more on radio-relay.*

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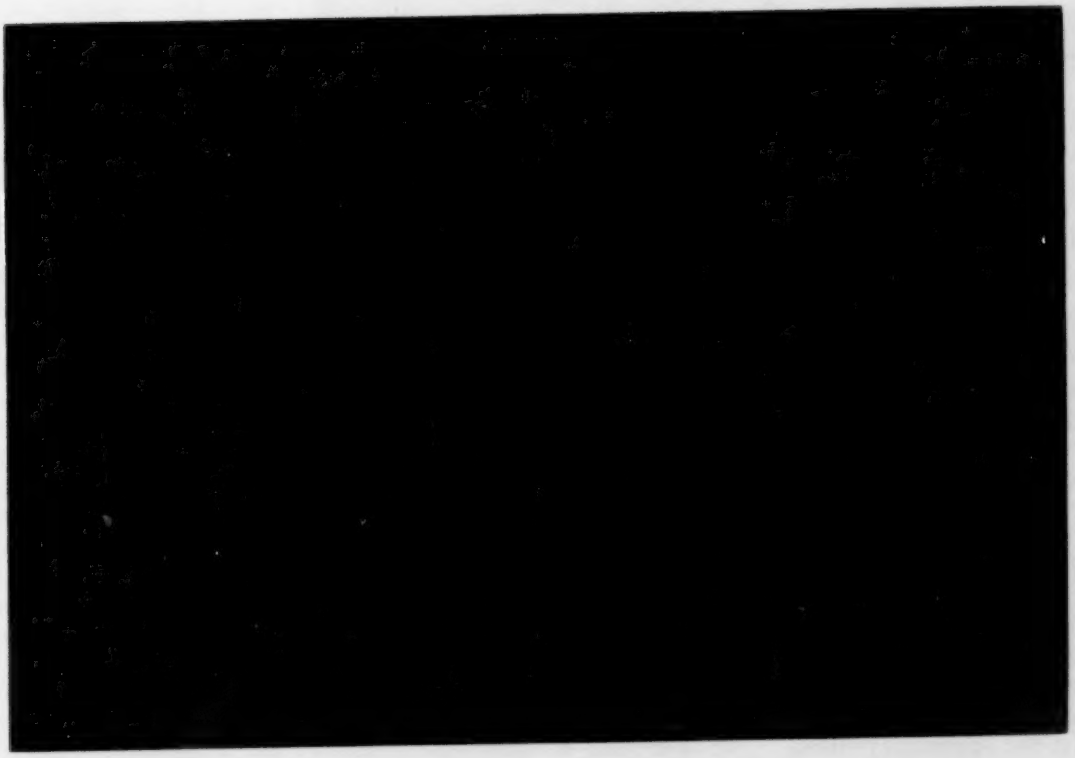
The Spanish Armada



By William V. Kennedy

The Bettmann Archive

Philip II of Spain

Deeper than the religious causes of strife lay powerful economic motives. Spain was determined to corner the new-found Atlantic trade with the New World. The merchants of England saw themselves about to be starved out of a commerce that promised prosperity such as England had never known.

In 1583, the Spanish admiral, Alonzo de Bazan, Marques de Santa Cruz, defeated the French fleet at the Battle of Terceira in the Azores, thus clearing the way for direct action against the English.

Sensing that his fleet was at peak efficiency and aware that the English fleet was growing in strength, Santa Cruz urged Philip to authorize an immediate attack on England.

Philip let the opportunity pass.

In January 1586, Santa Cruz again warned Philip that English power was increasing and that aggressive action alone could save the Spanish cause. Philip at last gave in. Santa Cruz was entrusted with developing the plan of operations and compiling an estimate of requirements.

Philip's assent was taken by the entire Catholic world as the signal for a crusade against the English heresy. Spanish, Italian, Irish, English and German Catholics flocked to Philip's standard. Of the Catholic nations, France and Portugal alone held back out of resentment against Spanish expansionism. The Portuguese, however, had little to say in the matter for their country was already in Spanish hands. Their galleons, with Spanish crews, were to form the vanguard of the Armada.

Whether Philip saw the Armada as an all-out crusade for the conquest of England is questionable. His every action indicated that he intended the Armada for more limited gains.

A peace conference was opened with Elizabeth's emissaries at Ostend in 1587. The Armada, it would seem, was intended primarily to exert an influence on the conference with the object of producing a religious and economic agreement favorable to Spain and securing the Spanish position in the Lowlands.

Whatever Philip's reservations, his sailors, soldiers and people saw the Armada as a total effort against England. Indeed, before the expedition was underway, Philip himself was forced to commit the wealth of Spain, of the Papal States, of the Kingdom of the Two Sicilies, of Portual and of the Spanish and Portuguese empires to its success.

Planned or not, all the elements of decisive conflict were brought into play.

Military organization in 1588 was by no means the polished sword which we know today. Armies and fleets relied on what we would call a militia system. The Royal navies of the day consisted of a few major ships and a cadre of administrators and artisans. Crews were made up from the merchant marine as the need arose.

That a major fleet could be organized with so small a nucleus was due to the fact that every ship afloat was a warship of sorts. The hard life of the day, the presence of guns on every vessel and the frequency of sea fighting, had built up a reliable "naval reserve" which the monarch called upon according to his needs.

Both the Spanish and English fleets were organized along these lines, with one notable exception. The English fleet consisted primarily of sailors, commanded by sailors.

The Spanish fleet was a waterborne army. The commander of troops was the commander of the fleet. He led and fought the fleet in the same manner as he led and fought a column on land. The soldier was "top dog" and the sailor the hired help. There were exceptions to this, but the dominance of land tactics and thought remained supreme.

Spanish naval tradition was born of centuries of fighting in the Mediterranean. Since the Punic Wars, soldiers had dominated sea fighting. The object, from the time of Hannibal, had been to close and board.

Under Sir Francis Drake and Capt

John Hawkins, the English fleet was coming to rely on gunfire and maneuver. The English ships had been redesigned for speed. They were packed with heavy and, for the period, long-range guns.

The Spaniards had ample opportunity to learn this in a hundred sea fights from the West Indies to Terceira, where English corsairs had aided the French. But they did not learn the lesson. The Armada was organized to fight a new naval war with the tactics, the ships and the guns of the past.

The armies of the Spanish empire were first class. Veterans of wars in the Lowlands, against France and in religious wars in Germany, the Spanish troops had won for themselves the title of "the finest infantry in Europe."

At Cadiz and Lisbon, Adm Santa Cruz pushed preparations for the expedition.

English spies in the Spanish ports and English pinnaces scouting the coast, gave the alarm. Sir Francis Drake was sent with a squadron "to prevent or withstand such enterprises as might be attempted against her Highness's realm or dominions."

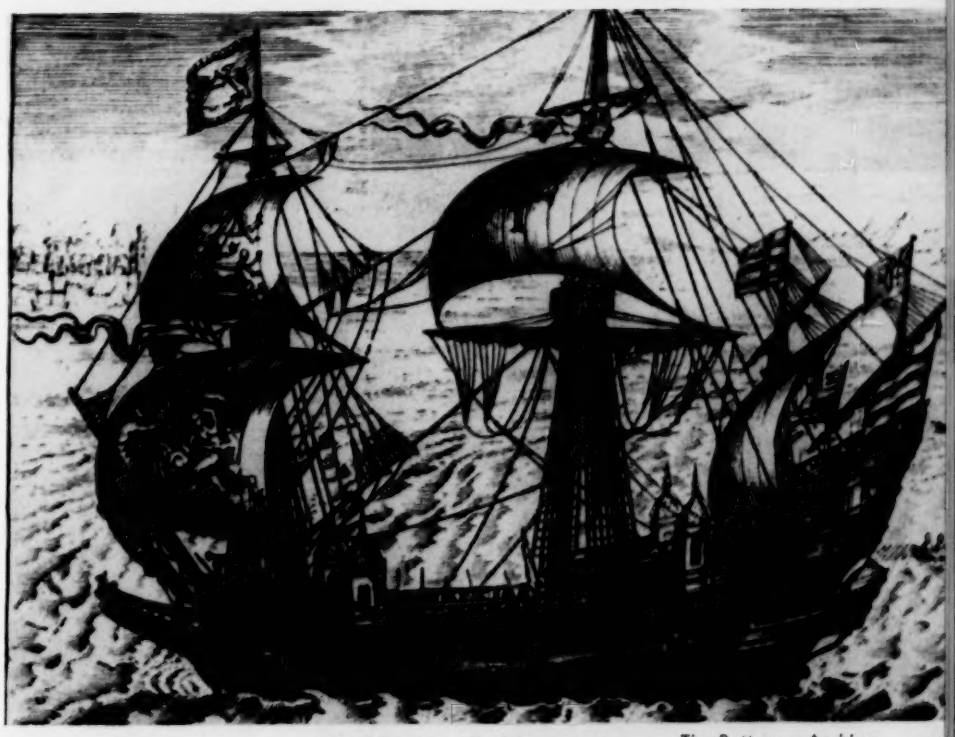
In April 1587, Drake sailed into the port of Cadiz, drove off the Spanish warships guarding the harbor and played havoc among scores of ships, great and small, that had been gathered for use in the Armada or for its support.

The long-range guns of the English fleet proved their worth. The Spanish galleys were unable to approach close enough to the English to do damage—this despite the fact that they fought in the protected waters of their own harbor, under the support of batteries in the nearby forts.

Drake left Cadiz with 6 Spanish prizes and with almost no damage to himself. In addition, Spanish reports list 18 ships totally destroyed, among them a galleon owned by Santa Cruz.

The English swept the Spanish and Portuguese coasts, capturing caravels loaded with masts, spars, pitch and casks. Standing out to sea, Drake's squadron ruined the Algarve tunny fishery, source of much of Santa Cruz' food supply.

Drake's squadron had struck a hammer blow at the Armada. The assembly phase of the Spaniards' amphibious venture was in confusion. The delay that resulted and the loss of supplies were to tell a fatal story when the Armada at last put to sea.



Elizabethan Galleon The Bettmann Archive

In February 1588, 10 months after Drake's raid, Santa Cruz died at Lisbon.

What happened next was probably the worst of all the misfortunes that befell the Armada. King Philip appointed Don Alonzo de Guzman, Duke of Medina Sidonia, to replace Santa Cruz.

Medina Sidonia's qualifications for the job were nil. His only military experience was as commander of Cadiz at the time of Drake's raid; hardly grounds for promotion.

"My health is bad," the Duke wrote to King Philip, "and from my small experience of the water I know that I am always sea-sick. . . . The expedition is on such a scale and the object is of such high importance that the person at the head of it ought to understand navigation and sea-fighting, and I know nothing of either. I have not one of those essential qualifications. I have no acquaintances among the officers who are to serve under me. Santa Cruz had information about the state of things in England; I have none. . . . If you send me, depend on it, I shall have a bad account to render of my trust."

Philip's decision to send Medina Sidonia, despite the Duke's own plea of incompetency, can be traced to a desire to keep the Armada tied close to Philip's own objectives.

Santa Cruz' plan had called for the Armada to leave Lisbon no later than the end of March 1588. Experienced sailor that he was, he knew that the fleet would encounter adverse winds if its departure was delayed until April or later.

Mr. Kennedy is a graduate of the Marquette University College of Journalism. Prior to entering college, he spent 7 months as a reporter for the Harrisburg Evening News. After college, he was employed as editor of the Mechanicsburg Daily Local News. He has served in the Army Air Corps, the Air Force Reserve and the National Guard. After graduating from the Intelligence School, Lowry AFB, Denver, Colorado, he was assigned duties as an operational intelligence officer with the 42d Heavy Bombardment Wing, SAC. His interest in the Marines and in the Gazette developed while studying military history and amphibious warfare at Marquette.

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Sir Francis Drake

Either because Santa Cruz had failed to appoint a second-in-command or because of negligence on the part of the government, preparations for the Armada fell into confusion after the old admiral's death.

When Medina Sidonia arrived at Lisbon to take command, he found conditions near chaos. Convinced, it would seem, that they were sailing in the cause of the Almighty and that God would make up for any errors on their part, the responsible authorities had been slip-shod in organization of the fleet and its supplies and in all matters of administration.

Water and provisions had been put aboard the ships in anticipation of sailing by the end of March. The hot Lisbon sun was already turning them putrid.

The effects of Drake's raid the year previous were beginning to tell. Ammunition, spare rope, spare spars, spare anchors, all were in short supply, having gone up in smoke or been sailed off to England in prizes of war.

Morale among the troops and the sailors was miserable. Desertion was rampant.

It was not until 25 April 1588 that the Armada sailed out of Lisbon. Some of the worst deficiencies had been corrected. So many remained, however, that the expedition was to suffer for them from that day forward.

The great fleet, the pride of all the Catholic world, consisted originally of 137 ships, ranging from great war galleons to merchantmen and dispatch boats. Aboard were 27,000 to 30,000 soldiers, sailors, gentlemen adventurers, volunteers and galley slaves.

The largest of the ships were of scarcely 1000 tons. They were packed with men from stem to stern, from gunwhale to gunwhale. In the whole fleet there were fewer than 100 doctors and their assistants.

For 3 weeks, the Armada beat up and down the coast of Spain, driven before the adverse northerly winds that Santa Cruz had predicted. The water had been on board for 4 months. It was now so foul that one drink resulted in an immediate attack of diarrhea.

The entire provision of salt meat, fish and cheese had deteriorated. The stench and the danger of pestilence grew so bad that every barrel of provisions had to be thrown overboard. Rations were reduced to weevil-infested biscuit.

On the 19th of May, almost a month after they had left Lisbon, a gale drove the Armada into the port of Coruna, Spain. Five hundred men were sick with dysentery. The ships had been mauled by the storms. It was 22 July before the Armada, reprovisioned, set sail again.

In England, mobilization of the fleet was in full swing. Crews were mustered from every port on the English coast. Lord Henry Seymour with a small squadron was detailed to watch the Spanish forces in the Lowlands. The bulk of the English fleet under Lord Thomas Howard, with Drake as vice-admiral, gathered at Plymouth.

Sailing in Lord Howard's fleet were 9 ships whose names would live to quicken English hearts for generations to come—*Revenge, Swiftsure, Vanguard, Triumph, Dreadnought, Victory.*

At least one man in Spain knew the reception which this fleet could be expected to provide. In April, the Venetian ambassador at Madrid had written, "The battle will in any case be very bloody, for the English never yield; and although they be put to flight and broken, they ever return, to renew the attack so long as they have a breath of life."

There was a conflict at Elizabeth's Court between those who wished to use the fleet as a coastal defense force and those who foresaw the doctrine of Mahan, that the proper mission for the fleet was to seek the enemy on the high seas and destroy him.

Whatever the debates of the Court, Lord Howard and his admirals endorsed the idea of aggressive action, a course dear to the heart of Drake. Through weeks of indecision on the part of the Queen's counselors, the English waited at Plymouth.

About the middle of June, some 20 Spanish ships, that had become separated from the Armada during the storms off the coast of Spain, reached the Scilly Isles. Lord Howard sailed to intercept them on 23 June. The Spaniards were warned in time, by a messenger from Coruna, and escaped.

The English now took up a position at the mouth of the English Channel to intercept the Armada. As it became clear that the Armada was delayed and open to attack along the Spanish coast, Drake prevailed upon Lord Howard to attack. On 7 July, they set sail for Spain.

On 11 July, with the Spanish coast almost in sight and with the Armada at their mercy in Coruna harbor, the wind changed and the English fleet was forced to return to Plymouth. Not the least of the factors preventing Howard from keeping station off the coast of Spain was his queen's parsimony in rations and ammunition—a factor that was later to cripple pursuit.

Drake's course of action was sound, in that he wished to crush the Armada as far from English shores as possible. Considering his shortage of provisions, however, the expedition to the Spanish coast was an act of rashness, turning as it did on the slightest change of wind. Forced back to Plymouth, Howard and Drake were to pay for their rashness with a surprise by the enemy and a near escape from destruction.

On 23 July the Armada, underway once again, passed Cape Ortegal. Medina Sidonia's orders from King Philip were to proceed directly up the English Channel. At the North Foreland, along the Flanders coast, the Armada was to cover the crossing of the Prince of Parma, Philip's commander in the lowlands. The combined Spanish forces were then to advance on London and take possession of the Government.

In the event the English fleet made this impossible, Medina Sidonia was to seize and fortify the Isle of Wight and the Prince of Parma was to reopen the peace negotiations at Ostend. The Spanish Army on the Isle of Wight and the Armada in the Channel would then be potent arguments in the Ostend conference.

The Bettmann Archive

Thomas Howard, Earl of Suffolk

On 25 July, the Armada reached the mouth of the English Channel and hove to under a gale. The high seas proved too much for the shallow-draft galleys, oar-driven craft of Lepanto fame, and they made for the French coast.

Gathering his scattered ships next morning, Medina Sidonia formed in fighting order and sailed into the Channel. Now was the course of Western history to be decided.

At 1600, the Spanish flagship, the galleon *San Martin*, raised the Lizard, a point of land near Falmouth on the coast of Cornwall.

Had Lord Howard and Drake kept their original station at the mouth of the Channel, the first battle of the Armada campaign would have then been fought. As it was, the English fleet lay at Falmouth, exposed to the same kind of treatment that Drake had given the Spaniards at Cadiz a year earlier.

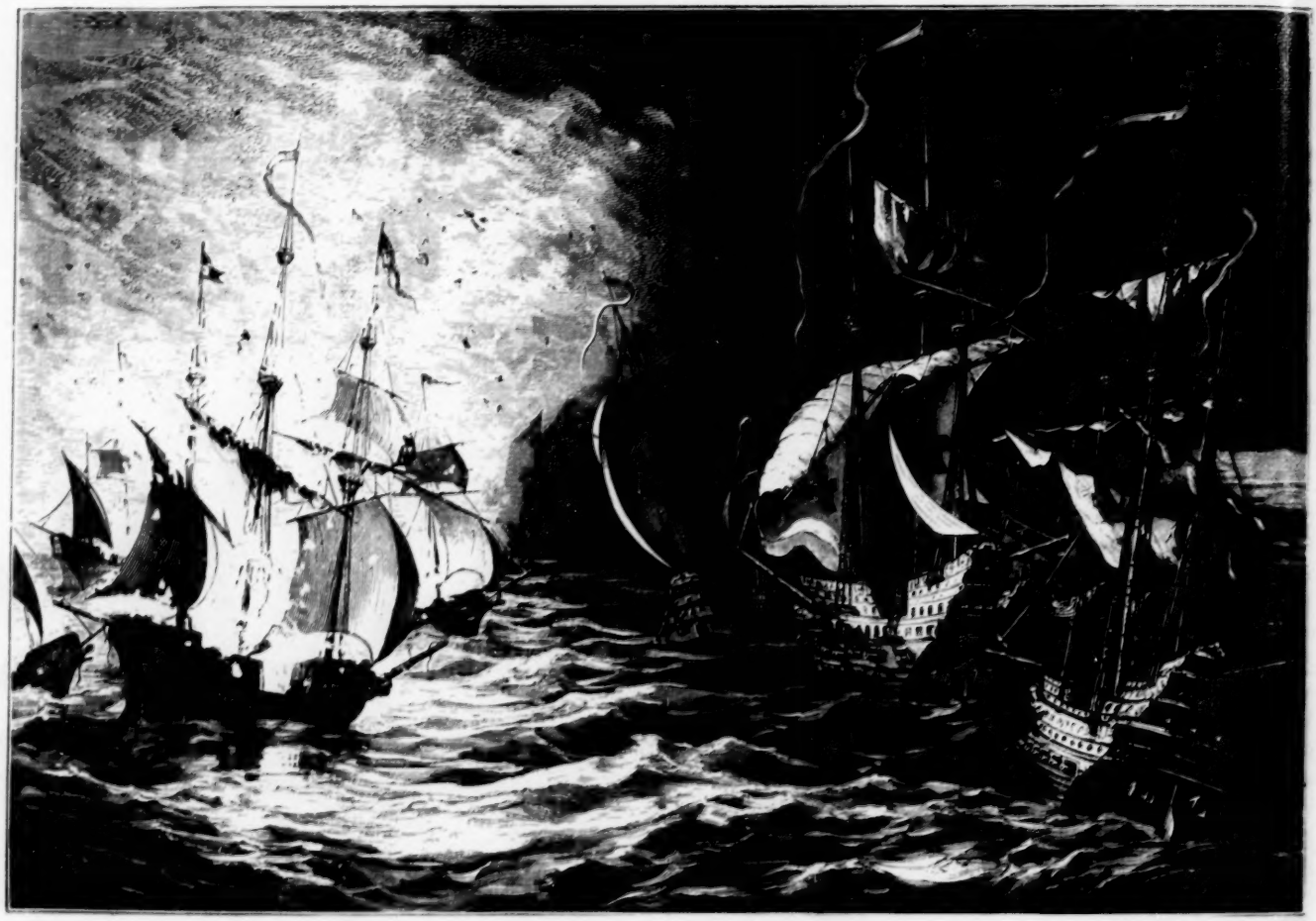
Tradition has it, and available evidence seems to support the story, that the news of the Armada's arrival reached Lord Howard while he and his officers were playing "bowls" on the Hoe at Plymouth.

"We shall finish the game," Drake is reported to have said.

"There's time for that, and to beat the Spaniards after."

Whatever the initial delay, the English worked through the night to get free of Plymouth. By morning Lord Howard's fleet was clear of the port, and of the danger of being caught in its narrow waters.

The 2 fleets that now faced each



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English fire-ships were sent into the Armada

other were more nearly equal in fighting power than is generally supposed.

The Spaniards still numbered 130 sail despite the losses to bad weather. The Armada was organized into 6 squadrons: the Squadron of Portugal, consisting of the *San Martin* and 9 other Royal galleons; the Squadron of Castille – 10 galleons of the Indian Guard normally employed as escort for convoys between Spain and the New World, and 4 "great ships" of less than galleon size; the squadrons of Biscaya, of Andalucia, of Guipuscoa and of the Levant, each of 10 armed merchantmen. The remaining ships were organized into a Light division and a division of "hulks," or non-effective transports.

Medina Sidonia and his naval advisor, Don Diego Flores de Valdes, sailed in the *San Martin*. They acted, also, as commanders of the squadrons of Portugal and Castille.

It should be noted that the galleons were not the oared ships usually associated with the Armada. They were sailing ships in the true sense. The English also used the name to describe their heavier men-of-war. The only oar-driven ships to remain with the Armada, after the storm at the mouth of the Channel, were 4 Neopolitan "galleases" serving with the galleons in the van and the "main battle" of the Spanish formation.

The Squadron of Biscaya was commanded by Juan Martinez de Recalde; the Squadron of Andalucia by Don Pedro de Valdes; the Squadron of Guipuscoa by Don Miguel de Oquendo and the Squadron of the Levant by Don Martin de Bertendona.

Sailing in his own ship, the *Rata Coronada*, was Don Alonzo de Leyva, the shining knight of Spanish chivalry, a veteran and successor-designate of Medina Sidonia.

Any one of these men, valiant and hardened sea dogs all, was better qualified to command the Armada than were either Medina Sidonia or Don Diego.

In all, the Spaniards mustered between 60 and 70 fighting ships carrying 2500 guns, most of them of small calibre.

Lord Howard commanded some 50 first-class fighting ships and 35 to 40 pinnaces and small craft. In terms of firepower and maneuverability, the English fleet so far outclassed the Spaniards as to reduce the Armada almost to impotency.

At 0500 on 31 July 1588, the English fleet sailed past Don Recalde's flagship, the *San Juan*, on the port flank of the Armada and raked her with broadsides. The heaviest metal ever delivered in a naval engagement smashed through timbers, guns, stores and men.

Unable to close and board, Recalde and the other Spanish captains watched their shorter-range guns drop metal harmlessly into the sea. At 1600, the English broke off the engagement, having battered the Armada all day with little or no damage to themselves.

That night, the damaged *San Juan* dropped out of line. Don Pedro de Valdes sought to go to Recalde's

assistance and collided with another vessel as he did so. Dismasted, Don Pedro himself fell behind. Medina Sidonia, despite the protests of de Leyva and Oquendo, sailed on. Don Pedro and 500 men were captured by the English.

Drake himself took Don Pedro's ship but caused the remainder of the English fleet to fall into disorder in the process. Recalde escaped.

Later the same night, Oquendo's flagship, *Our Lady of the Rose,* blew up from some mysterious accident, or sabotage, killing 200 men. This time, Medina Sidonia halted long enough to cover the burning ship and remove its treasury and the survivors. The wreck was then abandoned. Oquendo himself had been absent from the ship and so escaped to meet a sadder fate.

The spirit of the Armada's sailors and troops could hardly be worse. Sickened from 3 weeks of useless sailing off the Spanish coast in April and May, delayed for 2 months at Coruna, worn down by storms, dishonored by what they considered the abandonment of one of their finest admirals and now witness to the strange and unexplained destruction of a capital ship, they looked toward the future with foreboding.

The tactics of the English and the fearful carnage caused by their guns, with no comparable damage to the enemy to show for the sacrifice, did not help matters.

The first of August was spent repairing and reorganizing the Armada. Sheets of tin were nailed over the holes torn by Howard's guns. De Leyva was placed at the rear, the post of greatest danger, and the damaged ships passed forward, away from the trailing enemy.

On the night of 1-2 August, the Spaniards attempted to take advantage of a calm by attacking the immobile English fleet with oar-driven galleases. The wind came up as the attack got underway and the effort came to nought.

In escaping the galleases, Lord Howard sailed through the center of the entire Spanish fleet. So expertly were the English ships handled and so far superior were their sailing qualities that they accomplished the maneuver without harm.

Once free of danger, Lord Howard reformed and repeated his previous performance, raking the Spaniards at leisure, each shot tearing through the galleons and the packed troops they carried. The English kept it up until 1700 hours, then broke off.

The Armada reached the Isle of Wight on 4 August. Before the Spaniards could attempt a landing, Lord Howard bore down once more, reprovisioned and reinforced. Once again, English guns and English seamanship ripped and demoralized the Armada.

Medina Sidonia lost whatever heart he ever had for a landing on the Isle of Wight and proceeded on the original plan to rendezvous with the Prince of Parma.

Medina Sidonia sent messengers ahead, asking the Prince of Parma to send powder. Parma replied that he had expected to replenish his own powder from the Armada. Stunned by this news, the Armada hove to off Calais.

King Philip's orders had been to avoid the French coast, lest the Armada find itself cast up on the beach by the prevailing winds. Medina Sidonia, however, now sought but one thing—safety. He seemed to think that he could obtain it by getting as close to Parma's army as possible.

So contemptuous had the English become of the Spaniards' sailing and gunnery that an English pinnace, armed with one light gun, sailed into the Spanish anchorage, lodged a few shots into the hull of the *San Martin* and sailed off, with only a hole in her tops'l to show for her impertinence.

On the night of 7-8 August, the English attacked with fire ships. Medina Sidonia, unhinged already by the events of the past week, panicked the entire Spanish fleet. Cutting their cables, they stood out into the Channel, fearing that the fire ships were great floating mines, likely to blow up in their midst.

Morning found Medina Sidonia with only 40 ships at his command. Seventy others had drifted out of reach. Having cut away their anchors the night before, they had no spare anchors to keep them at their station. Once again, Drake's raid of 1587 took its toll.

This was the moment for which the English had been waiting.

The flagship of the galleases had run afoul of another ship the night before and was cast up on the French shore. Lord Howard attacked her, killed her commander and plundered the ship.

The Bettmann Archive

Queen Elizabeth

Drake, with the rest of the English fleet, descended upon the smaller of the Spanish squadrons.

Straight toward the *San Martin* sailed the *Revenge,* Drake's flagship. Holding fire to the last minute she fired her bow guns into the Spaniard, let loose a broadside as she turned, then swept on toward the rest of the Spanish ships.

Ship after ship repeated the *Revenge's* attack. Cutting off single Spanish galleons before they could form, the English pounded them to splinters.

No standing off now. The English moved in, yard-arm to yard-arm, driving home their broadsides with fearful effect.

The carnage of the past week was repeated. The entire scene was shrouded in smoke. Fleet action ended, as such. The issue was decided, ship-to-ship.

The *San Martin* was torn to shreds, her decks a slaughter pen. Not once were the Spaniards able to affix a grappling iron and attempt to board. For 5 hours they took the English cannonade until one witness saw Spanish scuppers run with blood.

The English broke off in late

afternoon, their powder near exhaustion. Elizabeth's parsimony and a sudden squall denied them the fruits of victory. What the guns of the English fleet had begun, the grey waters of the North Sea and the Atlantic were to complete. In the Armada, one galleon had sunk with all hands. Two others, the *San Philip* and the *San Mateo,* were cast up and dismasted on the Dutch coast. In men, the Spaniards lost 600 killed and 800 wounded. English losses were put at about 100 men.

The 9th of August found the remaining Spanish ships, shattered and helpless, drifting out into the North Sea. A change of wind saved the broken force from being run aground. During the day, the 70 ships that had escaped Drake's savage attack joined up. Medina Sidonia could take new stock of the situation.

With the English fleet now between themselves and the Prince of Parma, the Spaniards gave up all hope of establishing contact with their countrymen in the Lowlands. One question only remained—how best to get some part of the fleet back to Spain. Medina Sidonia chose what seemed to be the easiest course, the route around the northern tip of Scotland and along the West coast of Ireland.

On 12 August, the Armada passed the Firth of Forth. Howard and Drake trailed the Spaniards long enough to make certain they did not double back through the Channel.

Food in the Armada began to run low once again. Medina Sidonia's incompetence gave way to harshness. He hanged one captain for allowing his ship to go in advance of the fleet and placed another in chains. This, added to their many sufferings and their already well-established contempt for Medina Sidonia, is thought to have occasioned the break-up of the fleet that followed.

On 21 August, the remnant of the Armada passed 200 miles west of Cape Wrath. With that it began to disintegrate. The weather turned bad. Westerly winds drove half the great fleet onto the rocks of Ireland's Sligo Bay, singly and in groups of 2 and 3. The fate of the men from these wrecked ships was, perhaps, the most tragic part of the story of the Armada.

Ireland was in a state of chaos. Elizabeth's troops ranged the country, burning and pillaging. The power of the Irish chiefs, allies of Spain, had been weakened or broken. To the shame of the Irish race, renegade elements among the Western tribes robbed and murdered the shipwrecked soldiers and sailors as they came ashore.

The O'Rourke and The O'Neil, among other chiefs, did their best to stop the atrocities as soon as they heard of them. The English, however, had also heard of the Spaniards' fate and they hunted them down like animals. Of the 2,000 or 3,000 men cast up on the Irish coast, fewer than 100 are known to have survived. Medina Sidonia, Don Diego de Valdes, Oquendo and Recalde reached Spain alive. Oquendo, having fought with all the great skill and courage for which he was renowned, refused even to look upon his wife and children. Sick in body and in heart, both Oquendo and Recalde died within a few days after they reached home.

Don Diego was jailed, charged with the disaster. Medina Sidonia went home, amid the insults and the stones of the street boys in every town he passed.

Out of more than 130 ships, 65 returned. Of nearly 30,000 men, scarcely 10,000 ever saw Spain again, and of these, h u n d r e d s, like Oquendo and Recalde, only to die.

The power, the wealth and the glory of 2 empires and half of Europe had been gathered together. The Great Armada had been hurled against the English shore and the sea had washed back its wreckage.

King Philip did all he could for the survivors, and for the widows and orphans of the men who did not return. Elizabeth abandoned her seamen to disease and their wounds. They died destitute in the ports of England, ports made prosperous by their toil and blood.

True to their Mediterranean philosophy, the Spaniards saw the Armada, not as a fighting fleet, but as an armed transport squadron useful only to move the army from Spain to England where, on land, the important business of fighting would begin.

The English had decided that the "important" fighting was to be at sea. Try as he might, Medina Sidonia could not ignore Howard's and Drake's purpose.

Victor at Lepanto and Terceira, Spain considered her fleets invincible. Year in and year out, the gold of the Indies poured into her ports, cementing a confidence in never-ending prosperity and invincibility.

The Armada sailed into the teeth of a technical revolution which its leaders, in their smugness, had chosen to ignore, or discount. Neither courage, nor wealth, nor a tradition of victory could prevail against what one Spaniard called "the most terrible cannonade ever seen in the history of the world."

This—the price of smugness in the face of technical advances by the enemy—is the lesson of the Armada.

USMC

★ ★ ★ ★

Tall Story

ONE AFTERNOON, several years ago, the Commanding Officer of Basic School, a distinguished officer of about 6'4", chose to inspect the outdoor classroom areas.

His jeep pulled up unnoticed near a group of Basic School students who were seated on the ground. The captain instructor had properly seated them with the setting sun to their backs and in his eyes. He was absorbed in presenting his material and hence missed the arrival of the Colonel who stood quietly in the rear of the group.

Catching a glimpse of the shadowy figure in the rear, the instructor turned from his blackboard, squinted into the golden sunset and announced, "Hey, you long, tall drink of water, I told you people to sit down!"

Capt K. R. Steele

(The GAZETTE *will pay $10.00 for each anecdote published. Submissions should be short and pointed.)*

passing in review

BOOKS OF INTEREST TO OUR READERS

Sir Winston's Work . . .

THE NEW WORLD, by Sir Winston Churchill. 410 pages. Dodd, Mead & Co, NY. $6.00

Volume II of Sir Winston Churchill's History of the English Speaking Peoples is entitled *The New World*. It does span, as the title suggests, the period of the penetration and settlement of the American continent. But, while this new world across the sea was being discovered, another new world of changing spiritual and political concepts was transforming Europe and finishing forever the Middle Ages. It is this new world, this transformation of the political and religious complexion of the British Isles, that constitutes the main subject of this volume.

The first 200 years of what may be termed modern history are dealt with in a well balanced and highly readable manner. The period begins with the epic voyage of Columbus and the subsequent vast broadening of the then known world. And while this expansion, in the geographic sense, was taking place, the Renaissance continued to exert profound influence on the intellectual life of the day. Martin Luther now protested the abuse of temporal power by the Catholic Church, and the Reformation which evolved affected every country in Europe.

When Columbus landed in San Domingo, Henry Tudor had just completed the first quarter of his 25-year reign as Henry VII. Sir Winston has high praise for "the architect of the Tudor Monarchy, which was to lead England out of medieval disorder into greater strength and broader times."

There is, in this narration of the exploits of kings and queens, a constant thread—a feeling that Sir Winston gives us—of the majesty of royalty. There is good in each monarch; a goodness which in some manner seems to make up for the weakness and vacillation of which they as mortals might be culpable. Cromwell, while spoken of as the "Lord Protector of the enduring rights of the Old England he loved," nevertheless must "stand before history as a representative of dictatorship and military rule who, with all his qualities as a soldier and statesman, is in lasting discord with the genius of the English race."

The facile pen of Sir Winston Churchill is too well known to invite superfluous praise. He who enriched our libraries by his personal account of the Second World War, appears to possess the gift for writing of earlier periods with the same personal touch. This intimacy with history may well come, in part, from his illustrious ancestors who shared in its making, but we must add to this fortune of birth the honest acclaim due to a master writer.

Reviewed by LtCol V. J. Croizat

ED: *This reviewer is well acquainted with Old World attitudes on history, having served in Europe on several occasions.*

Intelligence and Espionage . . .

THE LABYRINTH—Walter Schellenberg, illustrated, Harper & Brothers, N. Y. $4.95

History will never accord to Schutzstaffel General Walter Schellenberg the same exalted niche he seemingly accorded to himself. Perhaps his recognition, or fear, of this was his reason for compiling his memoirs, now published as *The Labyrinth*. Or perhaps, as Alan Bullock suggests in his introduction, they represent the hind-thoughts of a deposed, disillusioned and ailing young man, who, like many of his contemporaries, had experienced in a single dozen years enough to last any normal being through several reincarnations.

Born in 1910, Schellenberg joined the *Nazi* party in 1933, became a member of the black-shirted SS (Schutzstaffel—originally Hitler's bodyguards) and then the elite Security Service of the SS. Never a practicing *Nazi*, as we think of his SS cohorts which included the Gestapo, and never a practicing military professional, he nevertheless rose rapidly to a relatively high position within the party.

Of his high intellect there appears to be no doubt, but his influence does not appear to have been so profound. In 12 years of intimate contact with high leaders of the *Nazi* state, numerous international diplomats and countless secret service members of many countries, he had his successes and his failures.

Presented in a personal first-person manner, the book shifts locale and time frequently, but steadily draws to the end when Schellenberg's final efforts to salvage something for his Fatherland failed.

Using a series of interesting espionage incidents, all of which occurred, the memoirs give enough facts to whet the appetite, but seem to assume that the reader knows about the incidents and that here, for the first time, is the true story. Schellenberg is a dominant figure in each, although it may well be that at times the name of Admiral Canaris, head of German Military Intelligence, should be substituted for Schellenberg's "I."

The memoirs represent, in highly readable fashion, a story of intrigue and espionage, and provide another source of material for examining and understanding the men who spawned, reared and rode the *Nazi* monster to its death. For those who know other sides of the incidents and controversies discussed, in fairness this book should be read. For those willing to explore a little further along the lines at which he continually hints, the book can be a take-off to any number of interesting studies. And for those who want an interesting and enlightening yet sketchy account of WW II espionage, it will prove more interesting than most "who-dun-its."

More important to many, the book, intentionally or otherwise, serves to point out again that in these times of troubled peace and cold war, the forces of intelligence/espionage are, as always, engaged in a deadly and vital hot war. In reading it, the military man cannot help but become a little more security conscious, and for that, if for nothing else, its reading is recommended.

Reviewed by LtCol G. B. Gierhart

ED: *Presently assigned to HQMC, LtCol Gierhart was formerly Assistant Chief of Staff G2, 1st Mar Div.*

Militiamen of the Revolution . . .

BATTLE FOR MANHATTAN—Bruce Bliven, Jr. 109 pages, illustrated, Henry Holt and Co., N. Y. $3.50

Flights of scared militiamen in the American Revolution have been treated severely by historians who themselves have shed more ink than blood. But this slender volume, composed of articles published originally in the *New Yorker*, deals sympathetically and intelligently

with Americans who redeemed their "cowardice" (a military synonym for lack of training) in the battle of Harlem Heights, 16 September 1776.

It wasn't much of a battle, to be sure, even when appraised by the modest numerical standards of the Revolution. It has the distinction, though, of being the only action ever fought on the present site of the nation's metropolis; and it meant a lot to rebels who had the satisfaction of seeing the backs of the redcoats after having been humiliated by two mass flights the day before.

The battle had no decisive results and the losses of both sides amounted to fewer than 400 killed and wounded. But the fight is memorable for the lift it gave to the morale of discouraged troops from whom too much had been expected.

Battle for Manhattan is devoted to a blow-by-blow description on the basis of wide reading of sound secondary sources. Mr. Bliven has done a good job on the whole, and he could doubtless have done a better one if he hadn't been limited by the over-limpid style of a magazine aimed at suburban matrons. His halftones of contemporary maps and illustrations are well chosen, and the reader can trace the troop movements according to present-day streets by means of modern locations superimposed on old.

Some mistakes are made in military technicalities, such as asserting that the rifle of 1776 could be fired twice as fast as the musket, when exactly the contrary was true. Perhaps it is carping to point out, also, that Smallwood's Marylanders did not wear hunting shirts; they were one of the few rebel outfits to be in uniform, and the color was red.

As for the militia flights, Mr. Bliven is to be commended for showing why, as well as how, they happened. If there is any lesson to be drawn by present-day Marines from this bright and readable study in morale, it is that a tough DI is still a boot's best friend, though it may take some time for this friendship to ripen.

Reviewed by Lynn Montross

Collector's Item . . .

SMALL ARMS AND AMMUNITION —Berkeley R. Lewis. 338 pages, illustrated. The Lord Baltimore Press, Inc., Baltimore, Md. $5.00

The book opens with a brief but interesting background of the performance of early long bows and crossbows. The author then discusses the first firearms, developed in Europe, which were fired by means of applying a live coal to the touchhole. From this crude and not always satisfactory manner of firing, the reader is led through the development of the matchlock, wheel-lock, and flintlock firearms. After assuring the reader a sufficient background of early gunpowder and firearms as they evolved in Europe, the scene shifts to America where the subject of gunpowder manufacture during early colonial life is thoroughly discussed. The almost astronomical number of different type firearms and ammunition employed by the Continental Army, the British and both sides engaging in the Civil War are thoroughly treated. For those interested in the accuracy of the old muzzle loaders it is pointed out that at a range of 200 yards, the Brown Bess had a vertical spread of 9 feet, 4 inches.

Col B. R. Lewis comes well qualified for the task he has performed. He is an expert in the field of small arms and is a well known weapon historian. The author is presently assigned as a special consultant to the Ammunition Group, Frankford Arsenal, Philadelphia, Pennsylvania.

ED: *Capt Haslam is assigned to Ord Co, 3d Svc Regt, 3d Mar Div.*

Reviewed by Capt C. B. Haslam

Controversial "Little Mac" . . .

GENERAL GEORGE B. McCLELLAN: SHIELD OF THE UNION, Warren W. Hassler Jr. 350 pages, index, sketch maps, illustrations and bibliography. Louisiana State University Press. $6.00

Perhaps if you were to ask a group of Civil War enthusiasts which Yankee General is the most controversial and least understood today, the majority would answer, McClellan. Author Warren Hassler has set about to correct that deficiency with a fine volume dealing with the military career of that officer. The result is a magnificent defense of Maj Gen George Brinton McClellan's leadership of the Union Army and a fine rebuttal to his many detractors.

The General, frequently called "Little Mac" because of his small stature or "The Young Napoleon of The West" because of his bombastic proclamations, was a marked man from the very beginning. By special permission he entered West Point at the age of 15 (17 was the legal minimum) and graduated second in his class. Twice brevetted for bravery in the Mexican War and a railroad president when called back to the colors, he was made a major general in 1861 at the age of 34. Equally imposing was his introduction to the Union Army. His victory over the Confederates in West Virginia in 1861 earned him a Congressional vote of thanks and resulted in his being called to Washington immediately after McDowell's defeat at Bull Run. "Little Mac" then demonstrated his ability to organize and train an army when he took the Union force, shattered after its defeat, and built it into a fighting organization as the Army of of the Potomac.

However, McClellan started with a serious political handicap that was to plague his military efforts. As a staunch Democrat with an outspoken attitude of tolerance toward the slavery question, he quickly became a target for the ardent Republicans who surrounded President Lincoln. The so-called Radicals—Nicolay, Hay, Stanton and Chase —were ultimately to prove his downfall. So effectively did they sabotage every military campaign that he planned that it is unfair to evaluate the results except as a case of what might have been.

For example, his Peninsula campaign was a beautifully planned maneuver and held every promise of great victory. However, at the crucial time when a maximum force was needed, the Radicals persuaded Lincoln that the Washington defenses were deficient and held back 1/3 of McClellan's force. Even then, his shift of base from the York to the James River, involving a flank movement across the enemy front, was a masterful tactical maneuver.

Months later victory might still have been salvaged if McClellan's advice to invest Richmond from the south through Petersburg— the way Grant ultimately won—had been accepted. In fact the war could have been won right there in 1862.

Instead of that, the Confederate cause received a major rejuvenation with the appointment of Gen "Old Wooden Head" Halleck as General-in-Chief and John Pope to take command of the Union Army. A second catastrophe at Bull Run convinced Lincoln that McClellan, not Pope, was still the best man to keep with the Army. Again he rebuilt the force, this time for the fight at Antietam. Once more McClellan demonstrated his leadership in a battle that was costly for both sides. However, McClellan might have achieved a decisive victory but for Gen Burnside's complete failure to carry out orders and attack the weak right flank of Lee's

Army, coupled with Halleck's stubborn refusal to send additional forces in time as urgently requested.

With Lee's escape across the Potomac, the politicians were at last able to depose McClellan. His successor was blundering Burnside who neither wanted the job nor had the ability to handle it. Proof came 5 weeks later in the worst Federal defeat of the war at Fredericksburg in a mad frontal assault the like of which McClellan could never have perpetrated.

But "Little Mac" was gone then, unable to halt the blood-letting of the beloved Army that he had trained so well. It would have been interesting to see what his leadership might have accomplished if, like Gen Grant, he had been unfettered by political hatchet-men. There is no doubt that he had shortcomings—overcautious, a victim of poor intelligence reports, undiplomatic in many of his dealings with the Cabinet. Yet withal, he had so many excellent qualities that he was worshipped by his troops and admired by the enemy. Gen Lee, for example, considered him "by all odds the best General that the Federal Army produced during the entire war."

Author Hassler has contributed much to General McClellan's defense in this volume by dint of diligent research. He has produced a well documented book that maintains high reader interest throughout.

Reviewed by LtCol H. W. Edwards

ED: *LtCol Edwards was formerly Head, Historical Branch, HQMC.*

Conquest of Mexico . . .

THE BERNAL DIAZ CHRONICLES—Albert Idell, trans. and ed.; 414 pages; illustrated; Doubleday & Company, Inc., Garden City, N. Y. $5.00

The current crop of war diaries, war memoirs and war fiction, has all but engulfed the literary world and has somewhat exhausted the subject of WWII and Korea. The jaded reader of these post-war literary efforts may renew his appetite by turning back to some of the better products of earlier days. An excellent prescription for such a reader is the recent translation of *The Bernal Diaz Chronicles* subtitled *The True History of the Conquest of Mexico.*

Some 400 years ago, Bernal Diaz, a conquistador who accompanied Cortes, sat down in the city of Antigua, Guatemala and wrote an eyewitness account of the conquest of Mexico. The intervening centuries have seen several translations of his work and in this latest effort by Albert Idell, the chronicles still have a strong grip on the reader.

The Bernal Diaz Chronicles describe briefly and vividly the 2 early expeditions against Mexico (Diaz went with both) and then turn to complete coverage of the Cortes expedition from planning, embarkation and movement to the objective, through the landing and belated seizure of the final objective. The writer apparently neither whitewashes or damns the expedition — a novel approach when compared to recent war memoirs. His eyewitness account deals in matter of fact tones with leadership strengths and weaknesses; with splendid combat efforts and post-battle dissatisfactions; with battlefield diplomacy and with logistic ingenuity. Throughout the book, one is struck by Cortes' ability to keep his mind on the objective and how that ability led to the final successful conquest.

The chronicles bring the reader ashore with Cortes as his force of 11 ships, 508 men and 16 horses, commenced the conquest of a hostile land defended by hordes of fanatic Indians.

The concluding chapters are characterized by excellent descriptions of the day-to-day fighting that took place for some 93 days until that fateful day on 13 August 1521, when the fall of Mexico marked the end of a civilization and the beginning of Spanish rule.

Bernal Diaz, writer of the *Chronicles*, was apparently well-qualified for his work. Not only was he an eyewitness to the expedition and previous efforts but also an extremely articulate one. As a professional soldier, Diaz knew of what he wrote. While the interval between action and recording may have dulled the author's memory, the same can be said for his prejudices. Albert Idell, translator and editor of this edition of the *Chronicles*, is the author of 9 novels and 2 non-fiction works including the *Chronicles*. An extensive traveller, he lived for 8 years in Antigua, Guatemala and had access to the original Diaz manuscript. His purpose in making the new translation was to strip prejudices of past times from the original story and bring the spirit of Bernal Diaz's experiences into the language of today. He has been eminently successful. The one deficiency noted in the book was the lack of sufficient graphics.

As a pure recital of military adventure, *The Bernal Diaz Chronicles* are worth reading. For the military reader, there are extra dividends. The reviewer found the *Chronicles* interesting and enjoyable and a welcome respite from the many sentimental and tired efforts in the current crop of war literature.

Reviewed by LtCol H. H. Reichner, Jr.

ED: *LtCol Reichner, formerly attached to G3 HQMC, is now at The Naval War College, Newport, R. I.*

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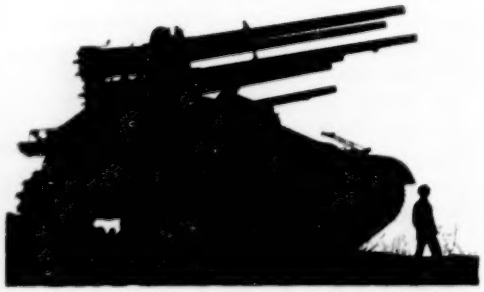
ONTOS



An addition to the commander's means for anti-mechanized defense. Let's examine its capabilities and limitations.

By LtCol E. L. Bale, Jr.

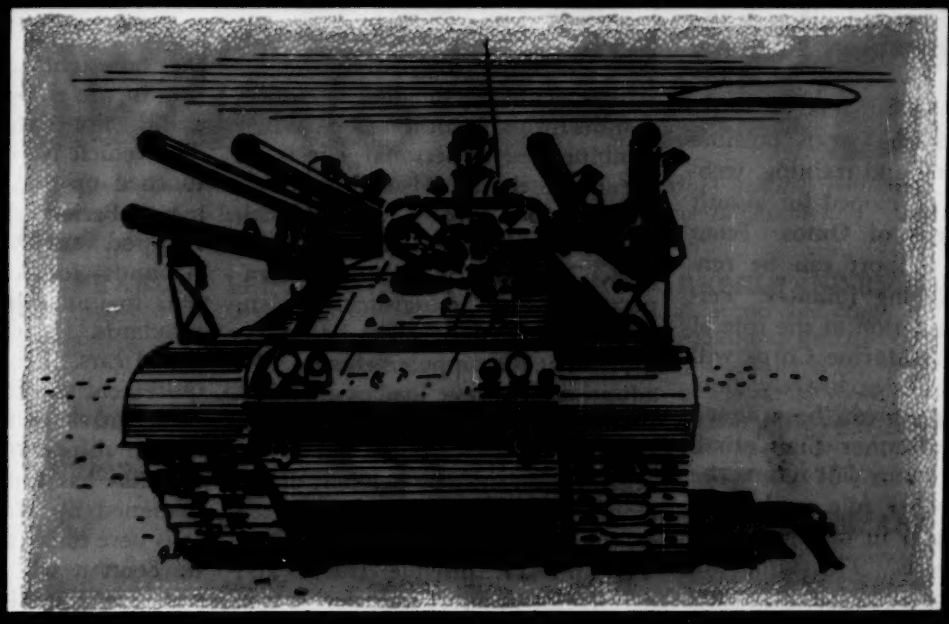
MARINES ON DUTY WITH THE US Army Armor School and the Armor Board, Ft Knox, Ky. recently had the opportunity to visit the LaPorte, Indiana works of Allis Chalmers, and tour the Ontos production facilities. There, the party observed all stages of production from the arrival of the armor plate, nuts and bolts, parts and assemblies received from subcontractors, the installation of government furnished ordnance equipment, and final inspection and shipment by the Ordnance Department of the Army. The Marine Corps accepts the vehicle upon its arrival at the shipping destination.

Ontos entered the Marine Corps after being rejected by the Army. The concept and the vehicle has been the subject of prolonged debate in many quarters. It has been called thin skinned, underpowered, incapable of sustained combat, lacking in staying power and just plain no good. It has been called a replacement for the tank, a regimental antitank weapon and a gadget.

Basically, Ontos is a relatively simple vehicle to produce. It involves fewer parts than other armored or lightly armored vehicles. There is no heavy turret with the resultant complex turret traversing and control system, no complex final drive and no involved system of fire control. The engine is a well known truck engine found in many military and civilian vehicles in the past. The transmission is the first application of a newly developed ordnance transmission designed to provide clutching, braking, steering and gear selection. Once we have trained both operators and mechanics, Ontos should be easily maintained by the user with a minimum of support from ordnance. In design, the unit or assembly replacement principle was kept foremost in mind. With adequate spare parts, rapid replacement of malfunctioning or defective components should give the commander a higher rate of availability than we can expect from tanks.

Conversely, the vehicle may prove to be slightly underpowered as there are but 90 horses coming out of the transmission, and these are required to move 8½ tons. The Ontos will not accelerate as rapidly as our present medium tanks and does not attain the top speed some critics desire. However, there appears no valid requirement for a vehicle of this type to exceed 30 miles per hour. The agility and ease of handling should more than offset any lack of power and speed.

The system of fire control incorporated in Ontos appears complicated at first glance. However, after studying the "flashing lights on the Christmas Tree," the average Marine will rapidly master it as easily as he has the pinball machine in the local drug store. The system is a healthy step toward a simplified fire control system. Incorporating a gunner's periscope and spotting rifles, gunner training time will prove compatible with driver training. There is no rangefinder, computer, ballistics drive, etc., to confuse the Marine and add to the training time required to prepare both the Marine and the unit for combat. The recent addition of a boresight retention device should prove of great value if a requirement exists to air drop the Ontos to helicopter assault forces or to fight the vehicle immediately upon conclusion of a long land or sea movement. We have a medium range antitank weapon without the costly, complex sys-



tems which have given us both training and maintenance problems but little visible increase in either accuracy or hit probability.

The track which gave so much trouble during initial testing has been improved and designed for replacement in sections. A track bar, containing both center and end guides, is easily removed and replaced in a minimum of time. Road wheels are simple in design, easily changed, and retain the unit replacement feature. Everything on and in the vehicle is easily accessible for either operation or maintenance.

The vehicle, with its armament and fire control system, gives the Marine Corps an antitank potential heretofore unknown. It will require both initiative and fortitude on the part of company, platoon and vehicle commanders if the full potential of the vehicle is to be realized. Its thin skin, alone, will force us to become both mentally and physically mobile in planning and conducting the antimechanized defense. Ontos will require extensive reconnaissance, rapid and quiet occupation of position, careful camouflage and concealment, accurate shooting, and hasty evacuation of position. These factors are not disadvantages. Careful analysis will indicate that they make it compatible with the modern concept. It fits the "lighten the load" policy. Ontos will prove to be a challenge to junior officers and senior noncommissioned officers, as tactics and techniques of Ontos are tested and refined in the field. Ontos is far more economical in both dollars and personnel than other comparable antitank means.

LtCol Bale is the Marine Corps Representative/Amphibious Operations Instructor at the Armor School, Fort Knox, Kentucky. He states: "I was prompted to write this article by a combination of factors: The concern of many junior officers that the tank is passing from the Marine Corps and that Ontos is the replacement; the prolonged debates on its value vs vulnerability; the negative attitude taken by some Marines toward the Ontos. . . ."

The offensive role of the Ontos is not so easily discerned. It is not a tank and cannot be expected, even by the most visionary, to replace the tank. It has neither the staying power, gun accuracy, nor gun range of the tank. It obviously has the ability to destroy bunkers, emplacements and vehicles. It is possible that with testing and training, techniques can be developed for assault gun employment of Ontos. From hull defilade, support can be rendered to advancing infantry. Perhaps a re-examination of the role of the tank in the Marine Corps will disclose areas, now exclusively those of the tank, which can be assigned to the Ontos. Rather than eliminate the tank, Ontos will return the tank to its proper role, and fill a long existing gap in our family of antitank weapons. The tank can now resume its role of mobile firepower, possessing mass and violence not found elsewhere among ground vehicles.

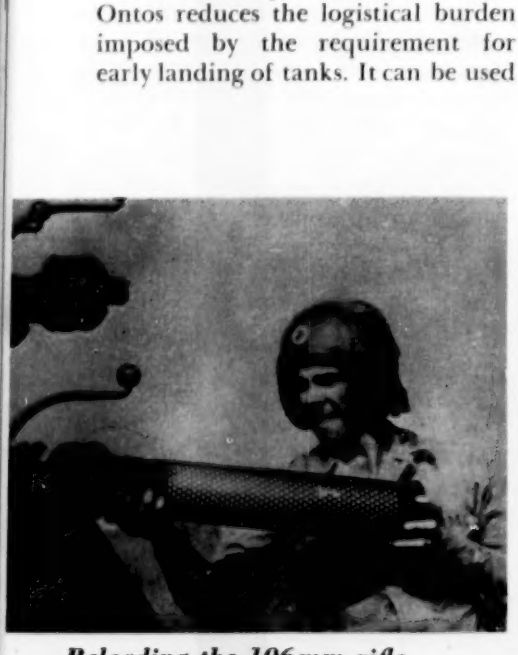
Ontos can well be utilized by commanders required to control areas lying between units widely separated. It can be attached to ground reconnaissance elements, to provide both mobility and firepower greater than that provided by wheeled vehicles but without the logistical burden imposed by the tank. It gives us a weapon for both the attack and defense of helicopter landing zones and drop zones. In the surface ship-to-shore movement, Ontos reduces the logistical burden imposed by the requirement for early landing of tanks. It can be used in a variety of ways in combination with LVT borne infantry.

Logistically speaking, Ontos has good and bad features. Fuel consumption, while not outrageous as in the tank, will be high. The tools and accessories comprising the on vehicle material include 2 ground mounts for the recoilless rifles. When combined with personal effects of the crew, the OVM will take up considerable space in support vehicle or company/platoon motor transport. The limited ammunition capacity adds to the logistical burden, but this is partially offset by the requirement for support vehicles. The adoption of a basic load of ammunition double the carrying capacity of the vehicle, would be an aid to the organization since 50 per cent of the ammunition could be transported on the support vehicle. The current TO and TE provide trucks and drivers for support vehicles in the ammunition section. Some consideration might well be given to the development of a support vehicle built on the Ontos hull, and the development of procedures for logistical support of Ontos by means of the helicopter.

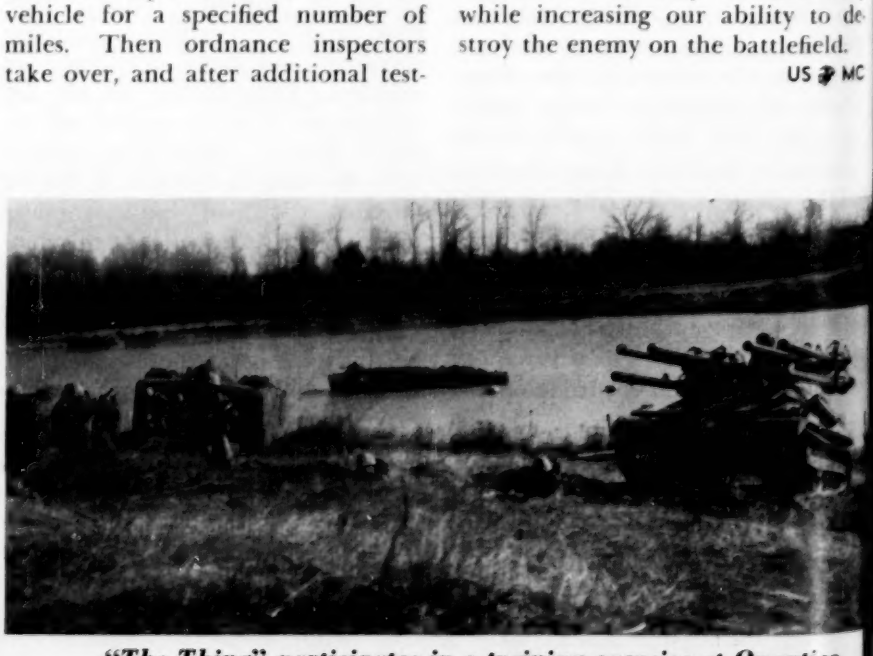
As to quality control of each vehicle being produced, the resident inspector of the Ordnance Dept observes each vehicle from hull fabrication to the driving off the line by test crewmen. Once completed, the vehicle is driven to a shop adjacent to a test track and checked. Manufacturers representatives drive the vehicle for a specified number of miles. Then ordnance inspectors take over, and after additional testing on the track, carefully inspect the vehicle prior to acceptance. The Ordnance mileage puts a total of 50 miles on each vehicle, and periodically a vehicle is run 100 miles. Before acceptance, Ordnance checks the boresighting and synchronization of the rifles and spotting rifles, and the fire control and safety sytem. The vehicle is inspected throughout, touched up and prepared for shipment. Periodically, vehicles will be shipped to Aberdeen Proving Grounds for further engineering tests to insure high quality control standards. Shipment is made in sealed cars. This eliminates the requirement for the extensive use of preservative materials required for flat car shipment.

Ontos has long been cussed and maligned by Marines of all ranks. It is here today and we have bought it. Soon it will be arriving in the FMF in quantity. The time has come when we must accept it for what it is, a good weapon when properly and aggressively used and maintained. We must employ it in training at every opportunity and in as realistic a manner as terrain and situation permit. It must be used with a positive or "can do" attitude with all hands striving to overcome the limitations so often discussed throughout the Marine Corps. The helicopter has given us vertical envelopment, mobility and flexibility unknown a few years ago. Ontos, if we don't fight the problem, can add to this mobility and flexibility while increasing our ability to destroy the enemy on the battlefield.

US MC



Reloading the 106mm rifle



"The Thing" participates in a training exercise at Quantico

The books listed below have been received recently by the GAZETTE *for review. More detailed reviews of many of these books will appear in subsequent issues. These books may be purchased at the* GAZETTE BOOKSHOP *now. Association members who are interested in reviewing books should notify the Editor and Publisher.*

THE INVASION OF FRANCE AND GERMANY, 1944-1945—*Samuel Eliot Morison. Atlantic-Little, Brown, Boston.* $6.50

This is volume XI of the history of United States naval operations in World War II as written by Samuel Eliot Morison. The volume tells the part played by the United States and Allied naval forces in the final victorious offensive against Germany.

THE RETURN OF GUNNER ASCH — *Hans Hellmut Kirst, Little, Brown & Co., Boston.* $3.95

The story of Asch's career as a soldier is brought to a devastating climax and conclusion in this third volume about him. This is a revealing and significant story of the life and death of the German military machine as seen through the eyes of a human being caught in it.

THE SECRET WAR 1939-45—*Gerald Pawle. William Sloane Associates. New York. Illustrated.* $5.00

The "back-room" story of Britain's top-secret experimental naval group whose brilliant activities during World War II had no exact counterpart anywhere else in the world. Given the name Inspectorate of Anti-Aircraft Weapons and Devices, the group was composed of men with high scientific or engineering qualifications whose job it was to make the enemy acutely uncomfortable.

A HISTORY OF HUNGARY, 1929-1945, Vols. I & II—*C. A. Macartney. Praeger, New York.* $20.00

This two-volume work is the history of the dramatic years between the ending of World War I and the ending of World War II when the Communists took over Hungary. Vol. I describes the period of reconstruction until the suicide of Minister President Geleki in 1941. Vol. II describes the momentous events in Hungary's history from 1941 through 1945. The author is Professor of International Relations, University of Edinburgh, and a Fellow of All Souls College, Oxford. He is regarded as the greatest living authority in the West on Hungarian history and culture.

LONG DISTANCE SWIMMING—*Gerald Forsberg. Philosophical Library, New York. Illustrated.* $4.75

This is a window on the world of Channel swimming, goggles, greasing-up and the whole ceremony of that scene. Mr. Forsberg has written this volume to show that the field of long distance swimming is particularly inviting to those who are tired of the regular swimnimg pool, or for those handicapped by injury or deformity. The book signposts the way from the short conventional distances to the marathons and super-marathons.

LAND OF DAHORI — *Olaf Ruhen. J. B. Lippincott Co., Philadelphia, Pa.* $3.75

Subtitled "Tales of New Guinea," this volume presents a land of witchcraft and taboos, of evil spirits and pagan idols. It is a land invaded by white men—with their own separate beliefs, customs and innovations — who set up courts of justice and lead dangerous patrols into unknown territory.

SOLDIERS AND SCHOLARS — *John W. Masland and Laurence I. Radway. Princeton University Press.* $7.50

The traditional distinction between military and political affairs in American life has become less significant as military officers increasingly participate with civilians in the formulation of national policies. They find themselves dealing with a wide variety of non-military considerations far beyond their conventional duties. This book deals with the impact of this situation upon professional military education.

HIGH-SPEED SMALL CRAFT — *Peter Du Crane. Philosophical Library, New York. Illustrated.* $15.00

In this book the author, a designer of high-speed marine craft, discusses the factors governing the problems of design and construction. Profusely illustrated with photographs, charts and diagrams, the book should appeal to all concerned in any way with the designing and powering of small high-speed craft. This second edition was printed in Great Britain.

REBELS AND REDCOATS—*George F. Scheer and Hugh F. Rankin. World Publishing Co., Cleveland, O.* $7.50

The story of the American Revolution in the actual words of its fighting men, its clay-pipe politicians, its foreign mercenaries, its determined redcoats and its civilian men and women.

THE SOLDIER AND THE STATE —*Samuel P. Huntington. Belknap Press of Harvard University Press, Cambridge.*

Subtitled "The Theory and Politics of Civil-Military Relations," this book's 519 pages are divided into three separate parts — Military Institutions and the State: Theoretical and Historical Perspectives; Military Power in America: The Historical Experience, 1789-1940; The Crisis of American Civil-Military Relations, 1940-1955.

MIGHTY STONEWALL — *Frank Vandiver. McGraw-Hill, New York.* $6.50

A complete revaluation of the personal life and military career of Thomas Jonathan Jackson. There is also a revaluation of his campaigns based on new evidence. The author is Associate Professor of History at Rice Institute.

COMMUNIST CHINA TODAY — *Peter S. H. Tang. Frederick A. Praeger, New York.* $10.00

This book is a comprehensive study of all major aspects of Communist China, its history and political structure, its personalities and policies. In addition to telling the WHO, WHAT and HOW of the Communist system, it also seeks to explain the WHY.

SOVIET RUSSIA IN CHINA — *Chiang Kai-shek. Farrar, Straus and Cudahy, New York.* $5.00

Chiang Kai-shek has written the story of China's role in the modern world, from the beginnings of the Nationalist Revolution led by Dr. Sun in 1911, to the present. He explains why the periods of so-called "peaceful co-existence" with Russia during the decades between 1924 and 1946 ended in failure. The volume is subtitled, "A Summing-Up at Seventy."

OBSERVATION POST

LET'S HAVE A DRINK

The distance from the maneuver area to Middle Camp Fuji was about 16 miles as the crow flies but, not being crows, we had to hoof it a full 36 miles around the base of Japan's sacred Fuji San. My rather erudite radio operator correctly described the muggy, humid atmosphere as "hotter than the hinges of hell." We were conditioned troops, having spent the past 10 days running small unit problems up above the cloud line. Our soggy utilities had a strange odor composed of equal parts of miticide and just plain sweat. Eventually it happened—one of the men, a slightly overweight PFC, simply couldn't go on and collapsed at the side of the trail. He lay there pale and weak for a moment with the sweat pouring off him, then rolled over and vomited.

The Gunny was at his side loosening his pack by the time I got there with the corpsman. He turned, shaking his head, as he growled, "I've told these guys over and over not to drink so damned much water." Almost as if in reply, the corpsman turned to one of the men standing by and snapped, "Go grab that five-gallon can of water off the ambulance jeep. This bird's completely dehydrated. Heat exhaustion."

That company gunnery sergeant was just about the finest NCO I'd ever run into. He picked up a Purple Heart at Tulagi and added a star to it after the Reservoir. Back when he went through boot camp it was considered commendable to leave camp at sunup with a full canteen, march all day in the broiling sun and return at night with enough water left to wash a car. He'd never fallen out of ranks with heat exhaustion, and if his stomach was a little queasy on the march, he blamed the stale ice in last night's final highball. He was sincere in cautioning his men against drinking "too much" water. He was passing on the dope which had been given to him by his NCOs many years before. Unfortunately, it was bum dope.

When the human body works it builds up heat. In fact even when the body does not do any visible work it builds up some degree of heat simply performing the process of living. This heat must be dissipated somehow and the body cooled, or heat exhaustion or heat stroke will result. In cool weather this problem is easily solved. The air, being cooler than the skin, readily accepts the excess heat. When the day is hot the matter is a little more complicated. The air, being as hot or hotter than the skin cannot accept that excess heat. To the contrary, if there is much difference in temperature, the body will gain heat from the air. At this point visible sweating occurs, the evaporation of the sweat cooling the body in much the same way that you keep a canteen cool by wrapping it in a wet sock.

There is nothing very complicated about the composition of human sweat. It is primarily water and salt. The function of the water we've already mentioned. The function of the salt has to do with maintaining proper pressure within the various body cells. The loss of too much of either one of these substances will make you a pretty sick man.

If an individual is, or becomes, used to working hard in hot weather, his sweat will have about one third less salt in it than a person who is not acclimatized. Therefore it isn't necessary that his salt intake be as high, since his body doesn't lose as much when he sweats. Everyone should be sure, however, to increase his salt intake appreciably during hot weather. You can increase the amount used on your food, dissolve some in your drinking water or take salt tablets.

Unfortunately, no matter how used to hot climates you may be, there just isn't any way to get around the necessity of replacing all the water that your system loses by perspiring. If you lose a pint you must replace a pint if efficiency is to be maintained. Training will not change this fact nor will the time honored custom of sucking on a couple of pebbles.

If you're on a hike on a hot day your body will lose about one and one half pints of sweat. That's about one canteen cup full of water you have to drink to replace the liquid you've lost. It won't make much difference whether you drink it right away or wait until later, but why wait and suffer when the water it available? Remember, here is one situation where practice doesn't help a bit.

I don't want to give the impression that I'm against water discipline, but water discipline doesn't mean not to drink water any more than fire discipline means not to fire your rifle. There are two compelling reasons for water discipline, to prevent men obtaining water from unauthorized sources and to prevent wastage of water when it is in short supply.

The worst part of the whole matter is that the times when troops require the largest amount of water are usually also the times when it is the most difficult to get it to them. In bivouac, one gallon of water per man per day is probably sufficient for cooking and drinking, but on the march or in a combat situation 3 gallons per man per day is the minimum for those purposes, and 5 gallons is a lot more desirable depending on the climate.

So, as much as I admire the Gunny, I'm afraid I'll have to conclude that he would have been a lot better off if he had emptied that canteen down his throat a couple of times a day. More important, his men would have been a lot better off too.

Marine Corps Order 3550.1A states in part "Men should be required to carry full canteens, given frequent opportunity to refill them, and encouraged to drink whenever thirsty." So come on you tired foot sloggers, sweating engineers, overheated tank jockeys — let's take a 10-minute break and have a drink.

Maj R. M. Head

A DIET FOR THE COMMAND POST

Assault troops are stripping themselves of comfort gear. Some units have discarded the pack to meet the weight requirements of this age of vertical envelopment. While men of the lette companies board helicopters with only a couple of cans of "C" rations in their pockets, their weapons and a poncho for shelter, the battalion headquarters and headquarters company still laboriously follows on the ground in "constructive" 'copters — personnel carriers towing bulging trailers. The battalion headquarters continues to move into the field on CPXs and FEXs like a Gypsy caravan. And when the CP is established, only a ferris wheel is needed to give the appearance of one of the country's larger carnivals.

This can no longer be.

The battalion headquarters must reshape tactically and logistically. Consider first the tactical requirement of an airlifted battalion headquarters in an isolated sphere of action. The linear concept does not apply. Rifle companies and supporting arms units will occupy strongpoints joined by fire but

without physical contact. There will be no rear area for the CP, since the front will be 360 degrees for a battalion operating as a separate force. The CP will locate within the perimeter formed by assault troops, but this perimeter will not be a tight ring. Essentially, the CP will have to defend itself against relatively strong patrol probes and, in all probability, against armor thrusts should its location be detected.

There won't be the old reserve company around the CP for protection. No head digging details in a perimeter type operation. The letter companies will have to spread if they are to present a poor nuclear target — spread too far to beat an enemy tank to the CP and intercept it. There will be anti-tank units within the battalion, but they will not always be able to second guess the enemy's choice of approach to the detected CP. And if the CP holds its anti-tank capability within its own confines, then avenues of approach for enemy armor through the rifle companies cannot be covered adequately.

The headquarters company CO must tactically choose the CP site with special consideration of natural anti-tank obstacles. Then he is going to rely upon cooks, clerks and motor transport people to defend his position. Headquarters Marines proved effective assault troops in Korea the few times called upon and they proved their worth with the 29th Marines on Okinawa during WWII. They would be tremendously more effective, though, with field training prior to combat.

The command post need not only brush up on the use of weapons, but it will have to take on a lean look administratively. The S-4 and battalion supply officer will need to devote more time to pre-planning before an operation. Resupply will largely have to be automatic with the S-4 and supply officer in the field to meet emergencies. Thus the bulk of their work must be completed before the first 'copter leaves the carrier or garrison. They can no longer move their entire office to the field and operate under canvas. If they find themselves unable to conduct business from a fighting hole, then they must re-evaluate until they can carry their paperwork in their hip pocket.

Not that the S-4 or supply officer is more guilty of carrying baggage than other staff sections. I mention them to illustrate a point — tentage must go. The CP of an airborne battalion cannot carry more than a single black-out tent for use in all-night operational planning.

The blackout tent must be a rigidly controlled working area. Here the situation map can be kept current, and from here the "6" and "3" can keep abreast of the operational situation. The supporting arms liaison officers must not be allowed to encamp in this tent as they so often do in the Supporting Arms Center. All who enter the black-out tent, or war-room, must be on business, not seeking a sleeping area.

Emphasizing again—CP tentage must go. Sleeping comfort cannot replace ammunition in the limited cargo space of even the larger helicopters now joining our Air Wings. From the standpoint of cover and concealment, the Headquarters and Headquarters Company must assume the invisibility of the well disciplined rifle company.

Many battalion headquarters have already adopted hip-pocket existence in the field, but for those who have not, the day of reckoning is at hand. The stingy logistical capability of the helicopter and the possibility of the isolated battalion operation, where the front describes a circle, demand:

1) Establishment of a fighting Command Post.

2) Detailed pre-planning of logistical and administrative requirements.

3) Re-evaluation of CP equipment and baggage.

The battalion headquarters must take on a lean look, thus there is a strict diet ahead for the still pudgy outfits.

Capt E. C. McCarthy

RESERVE—PART OF FORCE IN READINESS

In the thinking of many, there exists some doubt as to the exact status of training, experience and readiness of our Reserve components for actual service. We all know what a vital part the Reserve played in the tremendous expansion of the Corps to 6 divisions in WWII and their more recent role in the mounting out of first a brigade and then a reinforced division during the Korean conflict. However, today the family of thermonuclear weapons, the rapid advance of the vertical envelopment concept and the ever present threat of a missile launched attack, means that we could be involved in a war involving all of these new weapons and tactics in a matter of hours. Assuming this has happened and an immediate mobilization is ordered, let us examine our reserve program as presently constituted to see how it would work.

A classified mobilization plan exists and all units of the organized Reserve are accounted for, but who would we actually have at the time of "M" day? Today it would be a somewhat conglomerate mixture of backgrounds and experience due to the many changes in reserve legislation since WWII and Korea. All of the various categories of 6 months trainees, "K" and WWII vets, and people with the old style training background would all report. In a matter of 2 or 3 years, however, this situation will solve itself and people will have a like background *if* our reserve laws and programs remain relatively stable.

Acquisition of new Reserves with a similar background as the result of 6 months Active Duty for Training or its equivalent will mean that all types of units will be able to expand and broaden their home armory training programs. Infantry units can and are conducting more advanced problems with increasingly less emphasis on training in the basic military skills. The savings both in time and increased efficiency is great because basic military instruction, on a continuous active duty basis, is much more effective than it is with a week's interval between classes.

Officer and NCO training and development can now be given more than "lip service" because most of our units have aged enough that initial "growing pains" have subsided and the energies of all can now be directed to improving a "going concern." More time is needed for this type training than is presently available, however. Anyone who has had reserve program experience can recall many instances where officers' school had to be utilized for administration and conference time in order to comply with the myriad of requests for reports and data. Here we strike upon one necessary evil, that is the extremely heavy burden of paper work placed on reserve units and, more often than not, borne in large part by the small I-I Staff assigned to each unit.

Our training concepts, and perhaps even the number of paid drills authorized, must be continually re-evaluated if subjects such as a new "old drill," vertical envelopment, new FMF T/Os and so forth are to be adequately covered along with the existing required subjects. The *phasing in* of the new weapons involved in all of these changes will also require a rather lengthy re-education of all hands. The tools and facilities are, for the most part, in being to do the job. The bodies and the will are present or available. Given just a little time to "shake down" a bit of our Reserve components, they will again be fully ready to join with the regular establishment in any future conflict as in the past. Our motto is, as always, *"Semper Fidelis"* whether or not we add an R after the USMC. The team is a first line outfit and we are all duly proud of the accomplishments of our citizen Marines.

Capt J. R. Bradley

FRONT-LINE STORY

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Improve The NCO School

The need for effective NCO schools is understood by all. Is our present method of conducting these schools giving the Marine Corps the best return for its investment?

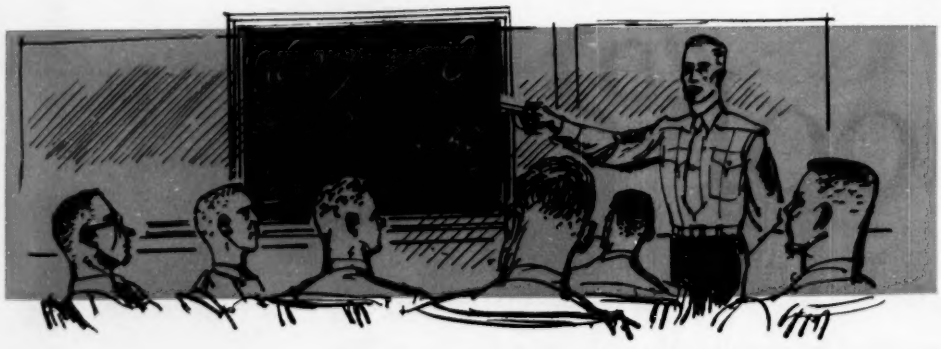
By MSgt Charles V. Crumb, FMCR

DURING THE PAST FEW YEARS I have served as an instructor in 3 large unit, Non-commissioned Officer Schools. In all 3 of these schools the training was effective and the results obtained were well worth the time, expense and energy required to operate them. Formal schooling is of inestimable value in preparing the NCO for efficient discharge of his duties and the information gained in these schools would require years to acquire by the unpredictable school of experience. Yet these schools could be improved. To point out *how* is the purpose of this article. In order to make these recommendations more clear, the 3 schools will be compared. Two of the schools were operated by FMF Units and one by a Marine Corps Base.

The first element to be considered is the course of study, because from the recommended changes in the course of study will evolve other recommendations. The length of the course of study was, in all cases, approximately 4 weeks — both instruc-

tors and students affirm that this is much too short. First, this short period does not allow enough time for the proper presentation of the subjects in the Schools' syllabi. It does not allow the inclusion of maximum study for some of our most vital subjects such as ABC defense. In many cases it takes several days for a student to "find" himself in the new routine and become accustomed to listening, studying and learning again. As many students have most aptly put it, "Gosh, Sergeant, by the time I could get squared away and used to the new routine and beginning to like it, I was half way through." The time and study lost while getting oriented cannot be regained in a course of study of such short length.

The course should be at least of 10 weeks duration. It is understood that this would reduce the number of NCOs who could attend the schools, so we will consider that aspect.



The question naturally arises as to which will be of more value to the Marine Corps; a smattering of learning to many or a thorough indoctrination to the top half. It is my considered opinion that the latter choice would benefit the Corps more, for the following reasons. First, only a thorough indoctrination will stand up under the resistance sometimes experienced after the student returns to duty. Unfortunately, there still exist a few who have this feeling: "I don't care what you learned at school, while you're in my outfit you'll do it my way." Only a man well enough instructed to carry himself with confidence and authority can prevail against that attitude. The partially instructed and the incompletely oriented will easily fall back into the old routine of doing things in a haphazard manner, if such is standard for that organization. Secondly, from the upper half will come the preponderance of your professional Marines. For these reasons it is felt that thorough schooling for the top half will be of greater value to the Marine Corps than a smattering of schooling to many.

An objection that may arise is that unit commanders will not want to lose their best men for a period of 10 weeks. True, units in the Marine Corps today are plagued by too many of their key men being on TAD to schools or other organizations. It is proposed, therefore, to separate our student from his organization completely, the unit commander getting another professionally trained NCO in his place. I strongly recommend that each of these schools have an administrative organization whereby students can be picked up on the rolls, paid and administered and upon the completion of the instruction, reassigned to another unit. The problems of pay, promotion, mail — both official and personal — are much more difficult for both the unit that has the Marine on its rolls and the unit that has custody of the Marine's person. Having a School's Personnel Organization similar to that in existence in Quantico would eliminate many problems and give the Director of the school the needed control of the student. The adoption of the 10 weeks course would make this paper-transfer worthwhile. The reassignment of the student upon completion of his instruction to a different unit will give our now professionally trained NCO a completely new start in different surroundings and lessen the chances of his slipping back into any former bad habits he might have had.

It is logical at this point to consider what changes should be recommended in the syllabus after extending the length of the course. Subjects which now occupy most of the instructional time such as tactics, mapping, leadership, military instruction and drills and ceremonies could be given more time, with plenty of night training in tactics and more practical application in mapping and military instruction.

Now consider the need for, and the merit of, the fringe subjects. By fringe subjects I mean those which are either just in or just out of the syllabus. Only one of the 3 schools presented history and traditions. At least 5 or 6 hours must be devoted to this in our lengthened course. Two taught Uniform Regulations. This will have to be included to make our NCO graduate an authority on what's correct in uniform. Two contained sessions on the Uniform Code of Military Justice—2 or 3 hours could well be spent on this subject in order that our NCO graduate knows a little about how to get the wheel of corrective action in gear. Only one of the 3 taught first aid. Several hours could be spent on the practical aspects of this subject, pointing up not only first aid for battlefield casualties but also drowning and highway casualties. Two of the schools taught a smattering of personnel administration as it affected the individual. This should definitely be included. Strange to say, one of the schools did not present organization and mission of the Marine Corps. Enough of this vital subject should be given in order that our NCO will have a mental picture of the makeup of his branch of the service and its position and job as a part of the Defense Establishment. One of the schools presented an hour on the Marine Corps as a career. This was worthwhile. Added to the subjects listed above, should be ABC training. The addition of these subjects, plus more time spent on the subjects already in the syllabus, and an hour of administrative time now and then for the student to work on his personal affairs and catch his breath, would round out the 10 weeks.

The schools' facilities and the lo-

MSgt Charles V. Crumb has had more than a passing acquaintance with instruction, both in and out of the Marine Corps. He spent 2 years teaching in the public school system of Minnesota plus duty as an NROTC instructor at Iowa State College. In addition he completed several tours as an instructor in NCO schools. When asked what prompted him to write this article, he stated: "It struck me what a fine outfit we could have if all the fine features of the old Corps were incorporated with the many excellent features of the new Corps." He presently lives in Milford, Del.

gistical support must be considered next. One of the schools had the finest of facilities with air conditioned classrooms and smartly furnished study lounges. The classrooms had large speakers' platforms with lecterns on rollers and large slate blackboards with pullout panels on either side. This school, in addition to having these splendid facilities, received excellent logistical support. Repair work was done promptly. In addition to this, the classrooms, offices and passageways were always in excellent police. Another of the schools was short on facilities. The classrooms were jury-rigged affairs but everything was in excellent police and repair and the logistical support required was generally furnished. The third of these schools was set up in a group of buildings that had outlived their intended usefulness by 10 years. Classroom facilities were practically nonexistent. It was impossible to obtain improvements and even the most necessary repair work was sometimes long delayed. Ammunition and other expendable items often were not made available and the police of all areas, both indoors and outdoors, although properly planned, was not always forcefully executed. On the credit side, however, the Training Aids Section had 2 talented and energetic artist-draftsmen who could, and did, produce excellent training charts.

A young Marine NCO upon being assigned to an NCO School expects to find a "squared away" place. He expects the school to have the best facilities in excellent repair and all areas in good police. He expects the instructors to be the most capable, and to be models in appearance and deportment. When he finds this is not the case, he is inclined to question other aspects of school. He also gets the impression that perhaps he can get by without too much effort and that something less than his best may be accepted by the school. On the other hand if he finds the school in good repair and excellent police with proper facilities and personnel of the school conducting themselves as the highest type Marines, he will immediately accept the fact that he is there to work and to learn, and only his best will be accepted. It is important, therefore, that those persons entrusted with the direction and support of our NCO schools see that proper facilities are furnished and maintained and that school areas are kept in excellent police, and that the items necessary to conduct the instruction are available.

The organization of the students and the school has an important bearing on getting the most from the instruction. One of the schools joined 200 students once a month and then divided the class into 4 sections. Another school joined a new class of 50 each week. The third joined about 80 students every 2 weeks. In other words this school had two classes of 80, each going through at once. The classrooms were large enough to handle a class of this size. In the school where 200 were joined, an instructor might have to give the same instruction 2, 3 or even 4 times in one day. It is very difficult to maintain high enthusiasm in the classroom under these conditions. This system also caused difficulty in scheduling in such a way as to give instructors an even work load. The first 2 weeks would cover the majority of the leadership and general subjects instruction while the second 2 weeks would overload the mapping and tactics instructors. On the favorable side of this system, however, was the fact that each class took on a character and that each instructor got to know the students better. The system whereby a new class of 50 started each week obviated the giving of the same class more than once a week and made the scheduling much easier. It also permitted an even work load for the instructors. The unfavorable aspect of this system is the fact that 50 men are not enough to make company tactics and company instruction in drills and ceremonies as practical as the same instruction of 80 every 2 weeks. The latter enjoyed the advantages of both systems and seemed to avoid the disadvantages. Classroom facilities for a class of 80 are much more difficult to set up, however, than the same facilities for slightly more than half that number. If it were possible to make a choice of the first 2 systems, I would choose the latter.

Each class or section must have a guide, a ramrod or in more conventional language a drill instructor. One of the 3 schools used men from the regular instructor staff as part time drill instructors. Another had full time drill instructors. A third vacillated from one system to another depending upon the personnel situation. The disadvantage of having a man doing 2 jobs at once is that he does neither of them as well as it should be done.

Two of the schools had a Training Aids Section and a First Sergeants' Section which operated in support of the instructors. In these 2 schools the jobs of typing, cutting stencils, mimeographing, custody of

examinations, lesson plans, etc., were divided between these 2 offices with the resulting confusion that might be expected. The third had an S-3 Section which, in addition to all the above named duties, was responsible for the production and custody of training aids, operation of projectors or any other job which had to be done in support of the instruction. The fact that this section contained talented artists and draftsmen, conscientious typists and projectionists, plus excellent supervision, made for a very efficient operation and was the outstanding feature of the school.

In one of the schools the director appeared to be concerned primarily with the welfare of all personnel. In the second there was concern over both the caliber of instruction and of personnel. The remedy for a bad situation or for poor instruction was sometimes hesitatingly stated, however, and incompletely executed. In the third, the director was chiefly concerned with the caliber of the instruction. Second rate teaching was not tolerated. There was no excuse for unpreparedness on the part of an instructor or any person in support of him. He was quick to reprimand and equally quick to commend. The police of the school and the condition of what facilities were available reflected the energy with which the director discharged his duties. The value of this kind of direction at an NCO school is inestimable.

The most important element of our NCO schools to be considered, is the selection of instructors. The caliber of the instruction, more than any other one thing and possibly more than all other factors combined, decides the effectiveness of the school. Let us compare the instructor personnel at each of the schools. One used company grade officers and senior NCOs. Another used NCOs almost exclusively, with lieutenants acting as Section Heads but not doing much classroom work. In the case of this school, many of the instructors were of Staff Sergeant grade and below, making a situation in which students sometimes outranked instructors. The third school used senior NCOs almost exclusively with only 2 officer instructors. These company grade officers had long years of NCO service behind them.

The ideal instructor is one in whom theory and practical experience is combined. This combination is most easily found in the senior NCO who has taken enough pride in his job to learn what is in the books and who has enough of a professional approach to his job to keep on studying. When you add to this combination a desire and ability to teach and a stature and conduct to command respect and to inspire, you have the ideal instructor. Young NCOs will accept the principles as they are laid down in books much more readily from men whom they know have seen these same principles tried in the field and found to be workable. It must be remembered, however, that rank and experience are not enough. It is felt, moreover, that to have students who are a grade or more higher than the instructor in an NCO School is definitely not desirable.

The caliber of the instructor is determined by the support the school has in drawing on the units for the best instructor material. In one of the schools the Director had only to designate the man desired and that individual would report to the school in a matter of days. Another could get desirable personnel through the normal personnel transfer channels. The third school seemed to have no support whatsoever in getting personnel from the units of the command. Men known to be oustanding instructors of long experience, who desired duty with the school, were not utilized because their commanding officer objected. The results of this kind of policy are apparent to all, namely, inexperienced instructors in a school very vital to the success of the Marine Corps, and improper utilization of personnel.

As was stated earlier, each of these schools was considered effective. Let me remind the reader that the contrast and comparison of the schools was made to bring out the points to be emphasized.

Let us recommend to those Marines charged with the direction of the schools that they: require the highest standards of effort and conduct; outstanding police and maintenance; arrange for a schedule that will make an even work load; organize the school in such a way as to avoid dual responsibility. To those staff members who are responsible for the supervision and support of the schools, let us ask for: a longer course of study; an administrative organization to eliminate the ills of TAD; the placement of the school in good quarters and then proper and timely support; and above all, a high priority in the selection of personnel to direct and instruct. The need for NCO schools is understood by all. The caliber of these schools is extremely important to the future effectiveness of the Marine Corps. Let's make them as good as they possibly can be. USMC

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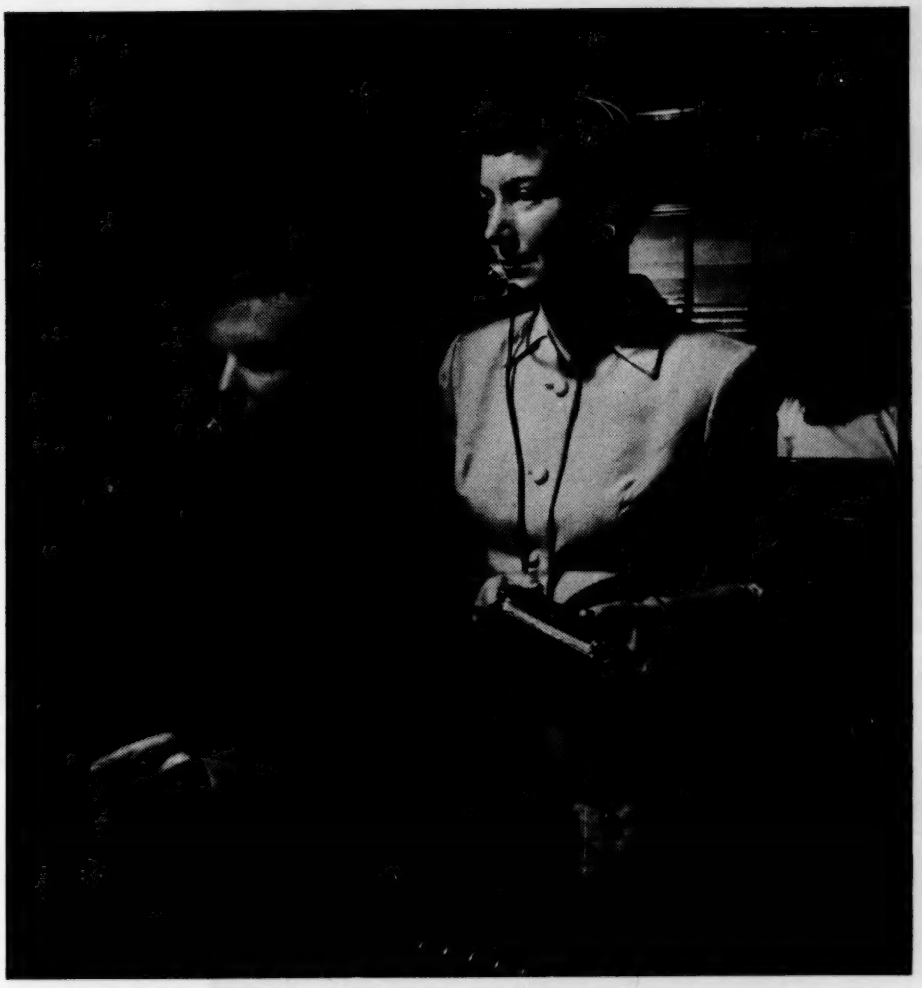

JEAN BULLENE LENDS AN ASSIST. *As a supervisor in the Garden Grove, Calif., telephone office, Jean conducts training and works with her group of operators in providing the best possible service.*

PHOTOGRAPHS BY ANSEL ADAMS

Day and night in your telephone company central office there are courteous, efficient women like Jean Bullene to help handle any unusual situation, and make sure your calls go through quickly and easily.

Know-how and team spirit make Jean (Mrs. Jack) Bullene well suited for her responsible job.

She helps train new telephone operators and is ready with immediate answers to any questions that arise in connection with the many local and long distance calls that go through each day.

She's a Voice of Experience behind the Voice with a Smile.

"I love this work," says Jean, "because I get a real feeling that I'm helping people in a very personal way. I know how important their telephone messages are and I'm proud to have a hand in keeping my neighbors in touch with family and friends here in Garden Grove and out of town."

Jean combines her telephone company work with a neighborly role in the life of her community. She has often observed that the spirit of service in the telephone company is contagious. And her many off-duty activities bear this out. When she's not busy with music, gardening and remodeling her attractive home, she pitches in on Cub Scout work.

As you can well imagine, Jean never has time to be lonely. But on the subject of loneliness she has this to say: "No one ever needs to be alone when there's a telephone handy. It's so easy to keep in touch with your neighbors or friends who are miles away."

JEAN APPLIES WAR PAINT *to her son as his Cub Scout den embarks on an Indian lore project. She has also worked with the Girl Scouts.*

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THE AMPHIBIOUS PATROL

A look at the role of amphibious reconnaissance and a plea to exploit its potentialities in the future.

By Capt David C. MacMichael

ALTHOUGH THERE ARE A HUNDRED and one other sources of information available to the amphibious commander, there will come a time when he must resort to the use of an amphibious reconnaissance patrol. Some information can not be obtained except by physical patrolling.

There are certain risks to be considered before a patrol of this nature is dispatched. First and foremost is the danger that such a patrol, if discovered, will indicate to the enemy our interest in the area. Secondary considerations are the probability that a patrol discovered on the enemy shore will not have a chance of withdrawal, and the risk of losing transporting craft sent into enemy waters or skies.

The Marine Corps, as the service specifically charged with developing the landing force aspects of amphibious warfare, naturally has the primary interest in developing and exploiting the capabilities of amphibious patrols. Marine Corps experience in the Pacific fully demon-

strated the value of a successful pre-landing reconnaissance. Perhaps the best known example of such a reconnaissance was that carried out on the landing beaches at Tinian by the 5th Amph Recon Bn. It confirmed General Cates' belief that a division-sized landing could be carried out on the tiny northern beaches of the island. Acting on the information gained by this reconnaissance, the 4th Div was able to land almost unopposed at a place that the Japanese had not prepared to defend.

To further demonstrate the value of the amphibious patrol one can think of operations where prior reconnaissance would have been of great assistance. For instance, at Roi-Namur the Marines, landing on Namur in LVTs and tanks, found an anti-tank ditch directly behind the beach which prevented them from going inland according to plan. Fortunately, the Japanese were unable to capitalize on the resultant confusion.

However, even though the Marines learned much of the value of the amphibious patrol in the Pacific, the experience was not as educational, in a certain sense, as it could have been. Although veterans of these landings may disagree with me, it would appear that our amphibious patrols operated with too little opposition. Consider, that with the exception of the New Britain operations, all the operations which featured the use of amphibious patrols took place while we held air and sea superiority, if not absolute control, over the areas of these operations. Also, the Japanese were lacking in many technical devices which would have enabled them to discover the approach of clandestine landing parties, and finally, the Japanese never seemed to become aware of the danger of amphibious patrols and were unprepared to defend against them. For an example of this consider the fact that the Makin raiders were able to take 2 days withdrawing. This testifies as much to the confusion into which they had thrown the Japanese as it does to the nonexistence of a capability, or will, for defending against clandestine landings. Referring again to the Tinian patrol it should be noted that due to our control of the sea and sky it was possible for the APDs to stand offshore without fear of attack, while the Marines worked the beach unhindered for 2 successive nights. Once again, I think we might attribute part of the success of this operation to Japanese failings.

In this connection it should be remembered that in Europe, where the Germans were not only the technical equals of the Allies but could dispute local air superiority until late in the war, and had in addition alert and well-prepared beach defenses, that the landings of British Commandos were often accompanied by high casualties and aborted missions. Realizing that in the future we may be operating against an enemy who is not only technically adept, but almost psychopathically security minded, we ought to be prepared to operate under conditions more reminiscent of European experience than our own Pacific war experience.

Looking at amphibious warfare of the future I think we can foresee an increased role for the amphibious patrol. In the dispersed, highly mobile, and fast-moving amphibious assault now projected, it will be highly important that enemy dispositions and installations be definitely located prior to landing. Thus, efficient use of our special weapons can be made and the effect of the enemy's nuclear weapons minimized. We can not take the chance in the future of having our armored force "penned in" on the beach by an unreported obstacle (as at Namur) a prize target for the enemy's missiles.

Going first to the definition of amphibious reconnaissance as a directed effort from seaward to collect information, let us consider ways and means of landing an amphibious reconnaissance patrol on an enemy shore, and withdrawing it after successful completion of the mission under the hazardous conditions we may expect in the future. First, as this operation is from seaward, the patrol must be transported to the area of the operation in some sort of sea or air craft. If we consider that the operation is taking place against an enemy possessing modern detection devices, and who has the means of delivering modern weapons against the transporting craft, it should be obvious that only the stealthiest or speediest means of transport can be considered suitable. This means either submarine or high-performance aircraft. When aircraft are used to deliver the patrol, it will be necessary to withdraw the patrol by submarine.

The capabilities of the particular form of transport must be exploited to the utmost. Take the submarine first. Despite many shortcomings as a transport vessel, it has the sterling quality of being able to remain beneath the surface of the sea, invisible to the human eye and hard to detect by any means. It follows that to gain the most advantage from use of the submarine, it must remain submerged during the approach to the objective area; while launching the patrol; while retrieving the patrol and withdrawing. The techniques involved are safe and simple.

When high performance transport aircraft are used they must be prepared to come in under the enemy radar, drop the patrol and get out. For withdrawal, a submerged submarine must be waiting for the patrol when it has completed its mission.

Following delivery into the objective area, the next problem is how to get the patrol ashore. With the use of aircraft, the answer is simple. Drop by parachute. The technique of landing from a submarine deserves a more detailed study. First, the submarine must remain submerged. Imagine yourself a submarine skipper, warily entering enemy coastal waters and getting as close off shore as you can without surfacing. Would you like to expose yourself on the surface? Of course not. And as an amphibious patrol commander you naturally want to minimize the chance of detection. If the patrol is of such a nature that it can be accomplished by swimmers, the launch is relatively simple. The patrol members merely make a free ascent through the submarine's escape hatch and swim to shore. However there are many factors which weigh against the use of a swimming patrol. First, the distance involved must not be too great, otherwise the patrol is exhausted when it gets ashore. Second, the control problem is enormous. In addition to the difficulty of controlling a handful of swimmers in the sea at night, there is the difficulty of maintaining direction. At Tinian the left flank company was swept

Will the aqua-lung replace the rubber boat?

completely out of the objective area by the current. The right flank company was swept into the left company's area. This necessitated completing the operation on the next night.

Another factor limiting the use of swiming patrols is the exceedingly small amount of equipment which they can carry.

Assuming that it is necessary to proceed to shore by inflatable boat, the launch should be carried out in this manner: 2 or 3 Marines equipped with aqua-lungs leave the submarine via the escape trunk. They take a deflated boat out of one of the deck wells; fasten it to the deck near the escape trunk, with a line of sufficient length to reach the surface; bring the boat to the surface; inflate it by means of a CO_2 cartridge. When this is done, the patrol members issue from the escape trunk and make free ascents to the boat by guiding along the line attaching the boat to the submarine. When all the patrol members are embarked in their boat, the lung men bring up weapons, clothing and other equipment in waterproof bags. The only thing marking the presence of the patrol in the area is the all-but-invisible little boat on the surface which may well pass unrecognized, if it appears at all, on enemy radar screens.

Following the launch, comes the difficult phase of proceeding to shore. It may be that the hydrography of the area has made necessary a launch several miles to sea. In this case, part of the trip may have to be made by outboard motor propulsion. Regardless of whether the whole or part of the trip to shore is accomplished by paddling, it is going to be a wet, back breaking ride through the surf before the landing point is reached. Mention of the landing point brings up yet another problem for the patrol commander: navigation from the transport to the correct landing point. If the patrol is operating as it should under conditions of poor visibility, then steering toward a landmark ashore will be impossible. An accurate method used during the last war which involved the use of the transport's radar and radioed course instructions to the patrol, is tantamount to suicide for both the patrol and transport, if the enemy is capable of radar or radio intercept and direction finding. So the patrol commander must rely on a pre-plotted course which allows for wind and current. The lensatic compass, disturbed by the proximity of weapons and other metal objects, and almost impossible to hold steady or read in a tossing small boat, is almost useless for this purpose. The standard Navy small boat compass, which is steady, easy to read and fairly accurate, will generally be available and has proven itself very satisfactory.

Once close to shore, to determine that he has indeed arrived at the correct landing point, the patrol leader may find it advisable to send a pair of scout-swimmers ashore to locate landmarks, as well as to make sure that enemy activity will not prevent the landing. The scouts will signal their findings to the patrol leader by light signals flashed to sea. If the scouts determine that it is the correct landing point and that the landing can be made, the patrol lands and carries out its mission. If the scout-swimmers find that it is not the correct landing point, they may signal the boat to pick them up, provided there is no enemy activity. If enemy activity prevents landing of the patrol, the scout-swimmers are indeed in a pickle. Although Joint Landing Force Manual 15 directs the scout-swimmer to swim back to his boat, anyone who has tried this through the surf on a dark night knows that it is not quite so easy as it sounds.

When the patrol is ashore, it establishes security, conceals the boats, reorganizes and carries out the mission. Once the patrol starts its reconnaissance it operates under the principles which govern all patrolling. Let it be remembered, in this connection, that the amphibious patrol has the same limitations as any other patrol. It should have a single, simple mission. If there are 2 pieces of information considered essential by the amphibious commander, he should dispatch 2 patrols. Assigning 2 missions to one patrol introduces a distinct possibility that neither mission will be performed well. Another factor to be considered in this line: if at all possible, do not require the patrol to report from within enemy territory unless it is not expected to withdraw. Every radio transmission increases the likelihood that the patrol will be intercepted and destroyed. Also the patrol leader's control is hampered by the necessity of moving his location after each transmission.

Withdrawal of the patrol is accomplished in much the same manner as the procedure from submarine to shore. The navigation problem in this phase is even more diffi-

Capt MacMichael served with the 1st Mar Div Recon Co in 1948 and with the 2d Amph Recon Co from 1954 to 1956. In addition, he attended the advanced underwater swimmer's course conducted by UDU-2 where he learned submarine escape techniques. He is a graduate of the Army Special Forces Course, Fort Bragg, N. C., where he studied airborne infiltration. He wrote this article because he believes that modern detection devices have made surface approaches to an enemy coastline impractical.

cult, however. If the submarine is to remain submerged, it is obvious that the slightest error in navigation will leave the patrol all at sea in more ways than one. There must be some homing device used which will guide the patrol to the submarine's exact position once it is in the general vicinity. One solution involves the use of infra-red light. At the time set for the return of the patrol, another boat is launched from the submarine and made fast in the same manner used during the launching of the patrol. It is manned by 2 Marines equipped with infra-red signalling devices. These are flashed in all directions. If the patrol is anywhere near, even within miles, depending on the visibility and the type of equipment used, it will be able to guide in on the signal. Granted such a method is subject to enemy interception, but the alternative calls for either surfacing the submarine, or using radio. Either alternative is far more likely to result in enemy detection.

Once over the submarine, the patrol reenters in the same manner as it was launched. The report is made either on return to the base, or as soon as radio silence may be safely broken.

Now let us take a closer look at the other method of landing the amphibious patrol. Should we ever drop a patrol in by parachute? The answer lies, of course, in the nature of the helicopter assault landing. If it is considered desirable to send a reconnaissance patrol into the area being considered for a helicopter landing, which may be 20 miles or more inland, then the delivery of that patrol by air should be seriously considered. The fact that the patrol is dropped near the objective area, lessens both the time it must spend in enemy territory and the amount of enemy territory that must be covered on foot. This decreases the chance of discovery by the enemy. Other advantages include not having to worry about concealing a boat; needing less rations and equipment due to the shorter time spent ashore; being spared the effects of soaking and exposure suffered by a patrol landing through the surf.

Withdrawal of the parachuted patrol, as previously stated, will have to be by submarine. Where weather and hydrography permit, the patrol might be able to swim out to the submarine. However, all the difficulties of control and maintenance of direction encountered in this operation would make this method a second choice. One method might be to have the patrol rendevous with another patrol landed for the express purpose of assisting in the withdrawal.

Failure of amphibious reconnaissance units to develop techniques which fully exploit every means of landing by stealth on hostile shores, and withdrawing with the desired information in the face of the most determined enemy counter-measures, will deprive the amphibious commander of one of his most necessary information gathering agencies.

Failure of amphibious commanders to use the reconnaissance units in accordance with their limitations and capabilities, will result in aborted missions and unnecessary loss of personnel.

Think of Tinian. Think of Namur. The success or failure of an amphibious patrol can mean the success or failure of a whole landing force.

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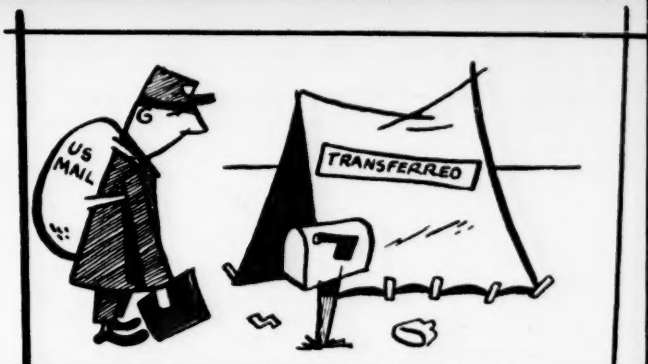

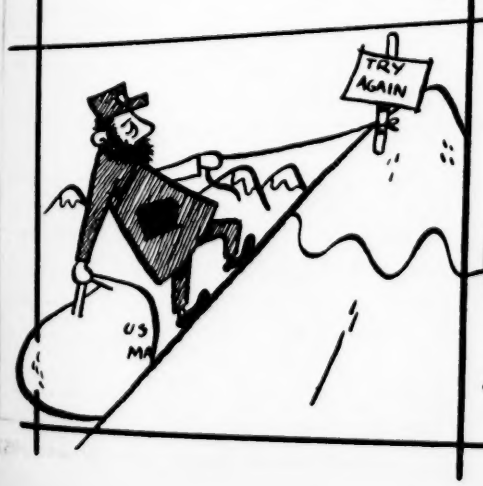

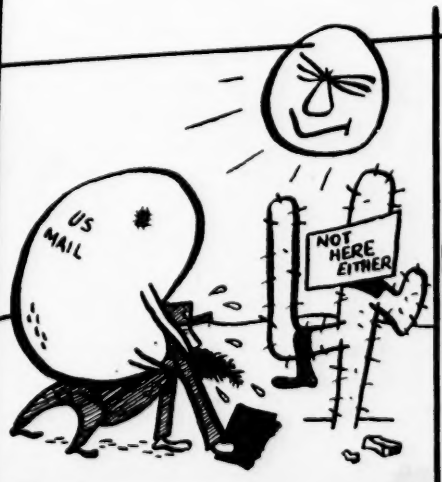

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